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A GUIDE TO THE GREAT EXHIBITION OF INDUSTRY.

AT length the doubts and fears of many months are at an end—the work is done—the triumph is complete. The great idea of an Exhibition of the Industry of all Nations has been realised, and the gates are open of the vast Building, which every branch of industry, and almost every country in the world has contributed to furnish and adorn.

On the 1st of May—a May-day which will long be memorable in the history of our country—the Queen, with all the splendour of her Court—with all the pomp and pageantry of a royal procession—with solemn and rejoicing music—with salvoes of artillery, amid the enthusiastic shouts of the representatives of a hundred different nations, proclaimed the opening of the Palace of Industry. Seldom have such ceremonies been bestowed in such a cause—not the celebration of he close of a long demoralising war, but the commencement, as we believe and trust, of a new era of peace and good-will.

Into this Palace we are about to enter—to traverse day by day its ong avenues and galleries—to describe, to explain, to criticise, to illustrate the various contributions of utility and beauty with which it is crowded.

Here we shall find the fruits of scientific progress practically displayed; here we shall find, side by side, in friendly competition, prepared to exchange lessons in civilising arts, nations which once met only as deadly enemies.

The great social lessons suggested by the completion of the Exhibition of the Industry of all Nations, are not less valuable than the educational. Of all European countries, England is the least visited by foreigners: they admire our industry, they purchase our solid manufactures, they dread our prowess and ambition; but the climate, the expenses of travelling, the absence of popular amusements, deter them from visiting our shores, or drive them away before they have had an opportunity of fully appreciating those personal qualities, which, when known, inspire respect, confidence, and permanent good-will.

But they have come now; and before proceeding further, we shall do well, perhaps, to enumerate the nations which have cooperated with us, and filled with specimens of their industry, the eastern wing of the Crystal Palace.

France and Austria stand first in the number of their contributions, although Prussia carries off the palm in sculpture, with Keiss's vigorous poetical Amazon, without question the finest bronze of modern times. We have also Norway, Sweden and Denmark, Holland and Belgium; the Hanse Towns and Northern States of Germany; several of the minor States of the Zollverein, Saxony, Bavaria, Wurtemburg; the Republics of Switzerland; the kingdoms of Piedmont and Sardinia, Tuscany, and Naples; the Papal States; Russia, Spain, and Portugal; Mahommedan Turkey, Egypt, Persia, and Tunis; Pagan Western Africa, and the converted islanders of the Pacific. The American Continent has answered us from New Granada, Mexico, Peru, Brazil; and, although last, not least, the United States have aided us in this great work.

In addition to our foreign friends, whom courtesy compels us to name first, our colonies and dependencies, many of which, although much talked of, are less known to us than foreign states, make up a goodly array Among these, Canada, Nova Scotia, and New Brunswick, corn and timber-bearing, hold a foremost rank, grouped with the barren sheep-walks of the Cape; the great emigration-fields of New South Wales, Port Philip, and South Australia, famous, too, for minerals; Van Diemen's Land, the alpine island of Australasia; New Zealand, the most romantic, healthy, and unprofitable of all our settlements; Bermuda, where the name of the chairman of the Executive Committee will ever be revered as the re-introducer of agriculture and horticulture. The Bahamas, famed for pine-apples, turtle, and shells; many West Indian islands; and St. Helena, chiefly remembered as the prison-house of a great captive; Ceylon, "the farthest Indian isle," and the fortress of Malta, join for this time together; while India, with gorgeous manfactures and a crowd of unknown productions, fills a large and prominent space.

THE GATHERING OF THE NATIONS.—ALLEGORICAL DESIGN BY JOHANNOT.

Thus, then, without metaphor, we can, as a plain matter of fact, assert, that the long wished for triumph has come at last; and that, in literal truth, a hundred nations, from Europe, Asia, Africa, America, and the fifth continent of Australia, have lent their hearty aid to the good work.

In this hour of pardonable pride and exultation, before joining the brilliant throng pressing forward to witness the inauguration of the jubilee of labour, it may not be amiss to pause for a few moments, and briefly recall the events which in less than two years have led to this realisation of a great idea; for, while we are shouting and flinging up our caps, and crying "God save the Queen," "God save the Prince," "God save the people, England, Scotland, and Ireland," we must not forget that more than once the whole scheme of an Exhibition has been on the point of being rendered impracticable.

It was on the 15th June, 1849, that his Royal Highness Prince Albert, on the strength of information collected by Mr. Scott Russell and Mr. Francis Fuller, announced to an audience assembled for the annual distribution of prizes, at the Society of Arts, that the time had arrived for attempting an Exhibition of the Industry of all Nations. On the 30th June the broad general features of the proposed Exhibition were laid down by the Prince in the shape in which they have since been carried. By deciding that the invitation should be extended to the industrious of all nations, the design was endowed with an original character, and, as will presently be shown, with an important element of success. A mere bazaar of British goods would have been of little advantage and of no grandeur.

Within a month from the first announcement, the Prince was engaged in anxious consultation with the committee appointed by the Society of Arts and the President of the Board of Trade, discussing the amount of patronage which the Government could with propriety and safety extend to the undertaking. The committee prayed for the sanction and shield of a Royal Commission to distribute prizes, amounting to £20,000; the said £20,000 being at the time *in nubibus*, but projected to be raised by public subscription. Experience had proved that the principal manufacturers of the kingdom had no confidence in the *dilettanti* judgment of the critics of the Adelphi, and no inclination to trust them with money. The President of the Board of Trade declined to advise the Crown to issue a Commission to distribute prizes which might never exist; for, as he observed, "A Royal Commission must have some definite object, and ought not to be converted into an instrument for raising subscriptions." At this moment the fate of the project may be said to have hung upon a thread. Without the prestige of a Royal Commission, the public would not subscribe and manufacturers would not exhibit. In this conference the only cheerful countenance must have been that of Mr. Labouchere, who had found a strictly constitutional protection against the infliction of a vast amount of new and unpaid labour. At length a solution was suggested by the financier and capitalist of the committee, Mr. Francis Fuller, to the effect that a contractor might be found willing to speculate on the profits to be derived from such an exhibition of manufacturing industry. This proposition was received as a forlorn hope by the other parties; but drowning men catch at straws. It was certain, that without some such aid the whole scheme would dissolve and end perhaps in a book, a pamphlet, or a report. At that period the uttermost hopes of the projectors extended to the area of Leicester-square or the open space of Somerset House. The meeting separated, Mr. Labouchere virtually saying, "Find your £20,000 for prizes, and I will advise the issue of the Royal Commission to distribute them." And he no doubt felt fully convinced that a contractor so confiding was not to be found. But Fortune favours the wisely bold. By the 3rd of September Mr. Fuller had actually found in the Messrs. Mundays, contractors willing to erect such a building, at a cost of at least £50,000, as the Society of Arts might require; to invest for prizes £20,000; to pay some thousands of pounds towards the working expenses of the Society of Arts; to set aside one-third of the profits for the benefit of that corporation; to leave the amount of their own profits and remuneration for labour and risk to the decision of an arbitrator; and to permit the Lords of the Treasury to annul the contract, on certain terms of compensation, at any time before the 31st of March.

The Messrs. Mundays made a noble offer; and we dwell upon this part of the history of the Exhibition with pleasure, because we cannot conceive anything which will give foreigners so high an idea of the capital, the enterprise, the public spirit, and good faith of Englishmen, as the fact that two individuals, almost unknown beyond the circle of their private business, could be found, not only ready to risk £100,000 on an entirely new speculation, but willing to allow the amount of their remuneration for risk so enormeas to be the subject of arbitration.

The fortunate conclusion of the search for a contractor was announced to the Prince by Mr. Fuller, at Balmoral, on the 3rd of September—a memorable morning—when his Royal Highness, immersed in the details of his great idea (now realised), kept gillies and hounds, and a hundred men "plaided and plumed in their tartan array," waiting a full hour until the sport of the morning, which had been prepared weeks before, was nearly lost.

The Exhibition of Industry was now "a great fact"; the sinews of war were provided; the issue of the Royal Commission was certain.

At this stage of the proceedings Mr. Wentworth Dilke joined the committee, which had previously the advantage of the services of Mr. Robert Stephenson, the great engineer of the age; of Mr. Scott Russell, eminent in almost every branch of science; of Mr. Fuller, a financier and agriculturist; and Mr. Cole, versed in official forms, and a well-known critic in art.

On the 3rd January the Royal Commission for the Promotion of the Exhibition of Industry of all Nations was issued: and at the first meeting of the Commissioners, they wisely resolved to annul the contract with Messrs. Munday, and make the undertaking rest upon the voluntary support of the nation.

Again there came a period of doubt and perplexity, if not of absolute discouragement, which it would be as absurd as unfaithful to pass over in silence, in the hour of triumphant success. The appeal to the public for subscriptions proved a comparative failure. In spite of fine speeches in the City and in Westminster, the money came slowly dribbling in, and the Royal Commissioners and the Executive Committee saw insolvency staring them in the face.

After a suspense of some weeks, a *Deus ex machind* appeared at a moment when the Great Exhibition was vanishing like a dissolving view before the faces of a crowd of noble and wealthy Commissioners, in the person of Mr. Samuel Morton Peto, M.P., who gave his guarantee for £50,000; after which the Prince and Court, and City magnates, Lord Overstone, the Rothschilds, and others followed, until the amount reached £200,000. On this security the bankers willingly advanced the needful funds.

Events have proved that Mr. Peto's help was most timely. The subscriptions paid have never reached £70,000; for although the Exhibition was well supported by the press, and popular with the working and middle classes, it met with considerable opposition from the great body of the upper classes, the clergy, and the agricultural community; and found very lukewarm countenance among the country traders. Even while manufacturing districts were warm and earnest, ports like Liverpool and Bristol were cold and parsimonious.

With rare exceptions, the movements in the provinces in favour of the Exhibition were not spontaneous, but the result of agitation organised in London. For the arrangements of this agitation the Executive Committee deserve great credit; it was one of the parts of the work which they really understood.

The next great difficulty was to secure early in spring a building suitable in form and material for so novel a purpose. The plan of the building committee of architects and engineers, with their town of brick and dome of iron, which, as the official plan, although disapproving, we felt bound to engrave in the ILLUSTRATED LONDON NEWS of June 22, 1850, would have indefinitely adjourned, if it had not totally ruined the undertaking.

Mr. Paxton's design for a Crystal Palace was produced in time to save the project from being lost, and the £200,000 guaranteed from being absorbed in a desert of brick and mortar.

But, although this admirable design had powerful support in the Royal Commission, in Mr. Robert Stephenson, and perhaps too in the Royal chairman, there were only a few weeks available (from the 15th of June to the 26th July) to create enough of public opinion in its favour to enable Mr. Paxton to bear away the palm from the combined efforts of a phalanx of architects and engineers, to induce the cautious statesmen and bankers of the Royal Commission to adopt a design so totally unlike anything ever before tried or seen; and to find capital to pay for, and contractors to make and put together, eighteen acres of iron and glass.

We believe that the ILLUSTRATED LONDON NEWS may claim a large share in procuring the adoption of this the only suitable design. On the 6th of July, we gave our subscribers and readers an opportunity of judging of the merits of a design to which no merely written description could do justice—a plan selected by us from hundreds pressed on our notice. This appeal to the eyes of the British public was answered by a universal verdict in favour of the Paxton plan.

But while public opinion was growing, funds, mechanics, iron, and glass had to be found before the 26th July, in order to realise the splendid paper project. They were found—and all in Birmingham—in the persons of Messrs. Fox and Henderson and Messrs. Chance; but it is not so well known that it was Mr. Charles Geach, the new M.P. for Coventry, one of the boldest and most successful financiers of the day, who, in engineering phrase, turned on the steam, and gave the contractors the strength and courage to undertake the gigantic task they have since so creditably executed.

From the day that the contract for Mr. Paxton's design was accepted by the Royal Commission, we have presented week by week a pictorial chronicle of its progress, until this day, when, with all the pomp and pageantry that Royalty can bestow, the Palace of Industry has been thrown open to the representatives of an admiring world.

In the meantime it must not be imagined that the other and all-important task of the Commission and its Committee—that of inducing the first manufacturers of every country to prepare to send their choicest productions—was without difficulties. Among many very eminent manufacturers in this country, the project was decidedly unpopular. Men who had already earned a high and profitable reputation for the production of certain manufactures, were not pleased with the idea of entering into a competition which they imagined might injure and could not benefit them. Then, again, the manufacturers of textile and all goods depending upon quality for their value, as well as many others in the hardware districts, were, and still are, opposed to the system of prizes, on the ground that in nine cases out of ten no competent jury or satisfactory decision can be obtained.

A variety of circumstances contributed to override both opposition and indifference, and to compel all in this country who had anything worth exhibiting, to exhibit in spite of their scruples and fears.

The cosmopolitan character of the Exhibition at once excited the attention of the manufacturers and of the Governments of the Continent. Mr. Scott Russell, in two journeys through Germany, was enabled, from his high position as a man of science, bearing credentials from his Royal Highness, to create an interest in the undertaking, which soon spread through every manufacturing town of continental Europe. The enthusiasm of the Continent reacted on this country, and called forth the energies of a host of contributors. The local committees, under sagacious advice from head-quarters, were lavish in their grants of space; almost every absurdity received a provisional allotment. Soon the cry went abroad that more than double the eighteen acres of Exhibition had been applied for; that the Commissioners had abundant funds, and that from England, Ireland, and Scotland, as well as America, it would be filled to overflowing. This brought the haughty and indifferent to their senses; they found they were in danger of being forgotten, so they relented, and begged for room, which, by a judicious weeding out of rubbish, was easily found.

From this rapid sketch, it will be seen, that, so far from the Exhibition of Industry of all Nations having been received with universal enthusiasm, and carried into execution without pause, halt, or hesitation, three times at least it has been in danger of total shipwreck. The comprehensive plan of his Royal Highness Prince Albert secured a great Exhibition, if any; a reduction of that plan into a practical fact has rested on the elimination of those qualities for which the sons of England are pre-eminent—unostentatious patriotism, commercial enterprise, and mechanical skill. In works of bronze and marble, in taste for the fine arts, in abstract science, foreigners rival and often excel us; but in no other country could a credit for £100,000 have been settled in one hour with a scratch of a pen; in no other country could so exquisite a building in iron and glass have been completed in the same space of time (nine months); and hitherto no other country has been found willing to invite its allies to a friendly comparison of skill in manufacturing art, to which, with infinite mutual benefit, Great Britain has frankly and successfully invited the whole world.

We now proceed to describe and comment on the internal arrangements; and, first, as to the officials in charge of the Building:—

The Exhibition, although vested in the Royal Commissioners, is practically under the control of the Executive Committee.

The Perpetual Chairman of this Committee, selected by the Government, when Mr. Robert Stephenson was created a Royal Commissioner, is Lieutenant-Colonel Reid, C.B. and F.R.S., the author of a work of great scientific and practical merit on the "Law of Storms," and successively Governor of the Bermudas and the Barbadoes, where he had the rare merit of becoming a popular colonial Governor, while contributing largely to the social, agricultural, and educational improvement of the people under his charge. The other members are Mr. Henry Cole, of the Record Office; Mr. Francis Fuller, and Mr. Wentworth Dilke.

Allowing for the topsy-turvy principle upon which many of the appointments were made, the details of the arrangements since the Building has been open for the reception of goods, have been conducted with great zeal and energy by all parties. The difficulties between the mistakes made by Local Committees and the mistakes made by the Executive Committee, were enormous; but hard work and determination, with a large staff of able practical men, eventually effected a distribution which will, no doubt, satisfy the sight-seeing public: to expect to satisfy all exhibitors, would be a hopeless task.

The space question having been settled, as far as it could be settled, then followed the task of classification,

CLASSIFICATION.

It will be observed that the classification has been, as far as possible, effected on the principles suggested by Prince Albert at his first conference with the original projectors of the Exhibition, in June, 1849. That is to say, the Exhibition has been divided into—1. Raw Materials. 2. Machinery and Mechanical Inventions. 3. Manufactures. 4. Sculpture and Plastic Art.

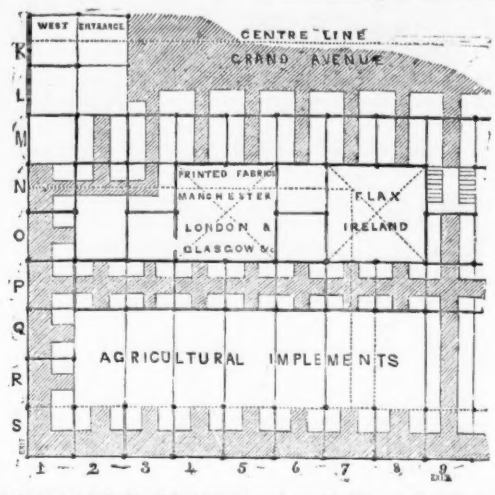
With respect to the productions of Great Britain, this arrangement has been strictly carried out. Various reasons rendered it advisable to allow each foreign nation to fill up its own space in its own manner. A strong argument in favour of this deviation from the original plan was found in the circumstance that without such concession the arrangement of the Exhibition would be indefinitely delayed until the last package from the most distant country had arrived.

Nothing could more clearly prove how well his Royal Highness had studied the problem he had undertaken to demonstrate than his suggested arrangement of raw material, mineral, vegetable, and animal, upon which the skill and industry of man is exerted to grow and manufacture; machinery, by which, from raw material, the greatest results may be obtained, at the smallest cost of time and toil; manufactured articles, in which the result of man's industry, applied to the gifts of a gracious Providence, may be seen and compared; sculpture and plastic art, from which the manufacturer and the consumer may alike learn to value that perfection which can only be attained by the union of beauty and proportion with useful manufacture.

Under one or other of these heads, an illustration of every material aid to the commerce, the agriculture, the manufactures, the sustenance, and the education of civilised communities, will be found. No matter to what country or pursuit a visitor may belong—peasant or peer, duchess or dairymaid—soldier, sailor, or man of science—miner or miller, farmer or engineer—under some one or other of the subdivisions of this classification we will undertake to find something which shall interest, amuse, instruct, and profit.

In order to perform our task as completely as possible, we propose to commence by giving a general summary of the countries and localities exhibiting. 2ndly. To explain, by the aid of diagrams, how any section of the Building may be found. 3rdly. To give a bird's-eye view of the more striking objects in each department. And 4thly. To make a tour through the Building, explaining and illustrating what is most remarkable in each section, so completely, that this series of Exhibition Supplements will, when concluded, form a complete *History of the "Exhibition of the Industry of all Nations in* 1851."

The Building may be divided, as shown in the annexed diagram, into four great divisions, by a line running from west to east up the central avenue; and another running from north to south through the centre of the transept. These four divisions being to the north-west and south-west, in which the British and Colonial contributions are arranged, occupying the whole of the ground floor and galleries; and the north-east and south-east, in which foreign productions are displayed, including a great portion of the galleries east of the transept, certain parts of them being devoted to the more complete display of British contributions. The distribution of space in the foreign side has been strictly geographical; whilst on the British side it has been as distinctly technical as circumstances would permit. To say that everything is so perfectly classified that the examples of each individual branch of industry are to be found in one spot, would be to state that the arrangements are perfection itself; in the great groups, however, this is the case to a much larger extent than could have been originally expected. Thus, manufacturing machines take the northern side of the north-west division; agricultural machines, the southern side of the south-west division. Textile fabrics of the most useful character form a large group, occupying that portion of the latter division next the nave or central avenue, with only a portion for cotton on the corresponding side on the north-west. The furniture department forms another group in correspondence on each side of the nave; whilst hardware, in its most useful forms, gives the dividing



line between agricultural implements and textile fabrics, the more ornamental branches being grouped on each side of the metropolitan furniture. The carriages form a great group, at the back of the cotton, leather, furs, and musical manufactures; whilst the Colonies spread their stores on each side the central passage, extending up to the transept. In the galleries, silks, shawls, and clothing form a grand group around the transept on the south side; whilst glass, porcelain, and miscellaneous contributions form an equally distinct display on the north side; tapestry and precious metals being placed next the nave in the gallery; chemical products and substances used for food taking the extreme south gallery; philosophical instruments and models of civil engineering, together with musical instruments, occupying the western galleries north and south.

In order, however, to give the best possible information as to the precise locality of the classified groups, it is desirable that the classification itself should be given, together with such indications of locality as may facilitate easy access to any group in particular, and the names of the gentlemen, and their assistants, to whom the arrangements in the various classes have been confided.

SECTION I.

RAW MATERIALS.

CLASS 1.—*Mining, Quarrying, &c.*

Professor ANSTED Mr. R. HUNT.

Division A.—Mining and quarrying operations	*Division* C.—Ores and metallurgical operations
B.—Geological maps, &c.	D.—Non metallic mineral products

The contributions in this Class are placed along the south side of the south-west division, extending the whole length of the agricultural implement courts.

CLASS 2.—*Chemical and Pharmaceutical Processes and Products generally.*

Dr. LYON PLAYFAIR. Mr. PHILLIPS.

Div. A.—Chemical substances used in manufacture	*Div.* C.—Chemical substances used in medicine and in pharmacy
B.—Rarer chemical substances manufactured for the use of the scientific chemist	

CLASS 3.—*Substances used as Food.*

Dr. LINDLEY. Dr. ROYLE. Mr. MATCHWICK, Assistant.

Vegetable Kingdom.

Div. A.—Agricultural produce—cereals, pulses, oil, seeds, &c.	mented liquors, and distilled spirits from unusual sources
B.—Dried fruits and seeds	*Div.* E.—Spices and condiments
C.—Substances used in the preparation of drinks	F.—Starch series
D.—Intoxicating drugs, fer-	G.—Sugar series

Animal Kingdom.

Div. H.—Animal Food and Preparations of Food as Industrial Products

As already stated, these classes are arranged in the extreme south gallery, above the contributions in Class 1, and are followed in the arrangment by animal substances and raw products generally, as indicated in Class 4.

CLASS 4.—*Vegetable and Animal Substances, chiefly used in Manufactures, as Implements, or for Ornaments.*

Dr. LINDLEY. Dr. ROYLE. Mr. MATCHWICK, Assistant.

Vegetable.

Div. A.—Gum and resin series	cluding materials for cordage and clothing
B.—Oil series	*Div.* G.—Cellular substances
C.—Acids; as acetic, citric, tartaric, oxalic, &c.	H.—Timber and fancy woods used for construction and ornament, and prepared by dyeing
D.—Dyes and colours	I.—Miscellaneous substances
E.—Tanning substances	
F.—Fibrous substances, in-	

Animal.

J.—For textile fabrics and clothing	*Div.* L.—As agents in the manufacture of various articles
K.—For domestic or ornamental purposes, or for the manufacture of implements	M.—For the production of chemical substances
	N.—For pigments and dyes

MACHINERY.

CLASS 5.—*Machines for direct use, including Carriages and Railway and Naval Mechanism.*

Mr. HENSMAN. Mr. BIDDLE, Assistant.

Div. A.—Steam-engine and boiler, water and wind-mills, various other prime movers.	cranes, &c., pile drivers, &c. (See also 7)
B.—Separate parts of machines, specimens of workmanship. (See also Water and Gas-works in 7)	*Div.*. E.—Locomotives and railway carriages, &c.
C.—Pneumatic machines	F.—Railway machinery and permanent way
D.—Hydraulic machines,	G.—Weighing, measuring, and registering machines for commercial and not for philosophical purposes

CLASS 5A.—*Carriages generally, not including those connected with Rail or Tram-roads.*

Div. A.—For town use	*Div.* D.—Public carriages
B.—Travelling carriages	E.—Carts and waggons of all
C.—For general use	kinds, not being agricultural

In this Class a great variety of machines are very distinctly classed in the arrangements, and occupy the whole of the three courts of the north-west division nearest the transept, and immediately at the back of cotton, leather, and furs, mineral manufactures, and furniture. The locomotives and railway carriages are placed on a line of rail, separating the machines not in motion from those to which steam-power is applied, the whole arrangement being very distinct and complete.

NEWSPAPER STAMP DUTY ABOLISHED

CLASS 6.—*Manufacturing Machines and Tools, or Systems of Machinery, Tools, and Implements employed for the undermentioned purposes.*

Mr. HENSMAN. Ensign CRASTER, E.I.C., Assistant.

Div. A.—Manufactures of all spun, woven, felted, or laid fabrics,
B.—Manufactures of metals.
C.—Manufactures of mineral substances, and mining machinery, (See section 1.)
D.—Manufactures of vegetable substances
Div. E.—Manufactures of animal substances.
F.—Machinery and apparatus for brewing, distilling, and manufacturing chemistry.

The machines to which steam-power is applied as indicated in the above classification, are all arranged on the northern side of the west end of the Building; cotton machinery being placed at the extreme west, followed by woollen machinery, that used in the manufacture of flax, and lastly silk and lace machinery, miscellaneous machines in motion; lathes and tools, with mills, concluding the group.

CLASS 7.—*Civil Engineering, Architectural and Building Contrivances.*

Mr. HENSMAN. Lieut. WALKER, R.E.

Div. A.—Foundation and building contrivances connected with hydraulic works
B.—Scaffolding and centering
C.—Bridges, tunnels, and engineering contrivances for crossing rivers, ravines, &c.
D.—Dock, harbour, river, and canal works
E.—Lighthouses and beacons
F.—Roofs, buildings, and contrivances for covering large areas
G.—Water-works, and the engineering contrivances connected with the obtaining, storing, and distribution of water in towns
Div. H.—Gas-works, and contrivances connected with the economical production of artificial light
I.—Sewerage, cleansing, paving, and the contrivances connected with the sanitary condition of towns
J.—Warming and ventilating domestic residences, and the contrivances connected therewith
K.—Miscellaneous

The models and contrivances in this Class are placed, so far as they are grouped, in the south-western corner of the south-west gallery; but numerous models belonging to this class, and those, too, of the highest character, are placed in various parts of the Building.

CLASS 8.—*Naval Architecture, Military Engineering; Ordnance, Armour, and Accoutrements.*

Captain WESTMACOTT, R.E. Mr. WATTS, R.N.

Div. A.—Illustrations by models of ship-building for purposes of commerce
B.—Illustrations by models of ship-building for purposes of war
C.—Illustrations by models of ship-building for the application of steam or other powers
D.—Vessels used for amusement, and small vessels generally
E.—Rigging, anchors, windlasses, capstans, sheeting, and articles connected with practical seamanship and the saving of life from shipwreck
F.—Infantry army - clothing and accoutrements
Div. G.—Cavalry army - clothing and accoutrements
H.—Camp equipage—such as marquees, tents, &c.
I.—Artillery equipments, both in garrison and the field; machines for mounting and dismounting ordnance
J.—Naval gunnery and weapons of attack and defence more especially adapted to naval purposes
K.—Ordnance and projectiles
L.—Small arms
M.—Military engineering, field equipments, methods of passing rivers and other obstacles, the attack and defence of fortresses, and field fortification

The models in naval architecture and other contributions in Class 8 have been arranged in the north-western corner of the north-west gallery, so as to balance the arrangement of Class 7.

CLASS 9.—*Agricultural and Horticultural Machines and Implements.*

Mr. BRANDRETH GIBBS. Ensign SOADY, E.I.C., Assistant.

Div. A.—Implements for tillage
B.—Drilling, sowing, manuring, and hoeing machine
C.—Harvesting machines
D.—Barn machinery
E.—Field, fold, and yard machinery
Div. F.—Agricultural carriages, harness, and gear
G.—Drainage implements
H.—Dairy implements
I.—Miscellaneous implements used in agriculture
J.—Garden engines and tools

Agricultural implements form a great feature in the south-western division, and occupy the courts between the main passages from west to east on that side of the Building extending from the extreme west to the Sculpture Room.

CLASS 10.—*Philosophical Instruments and Processes depending upon their use: Musical, Horological, and Surgical Instruments.*

Lieut.-Col. LLOYD. Ensign TREVOR, E. I. C., Assistant.

Div. A.—Instruments for the measurement of space
B.—Instruments to measure the effects of mechanical and physical forces
C.—Instruments to illustrate the laws of mechanical and physical science
Div. D.—Application of mechanical and physical science to useful purposes, not included in any of the preceding or subsequent sections
E.—Chemical and pharmaceutical apparatus
F.—Miscellaneous

CLASS 10A.—*Musical Instruments, &c.*

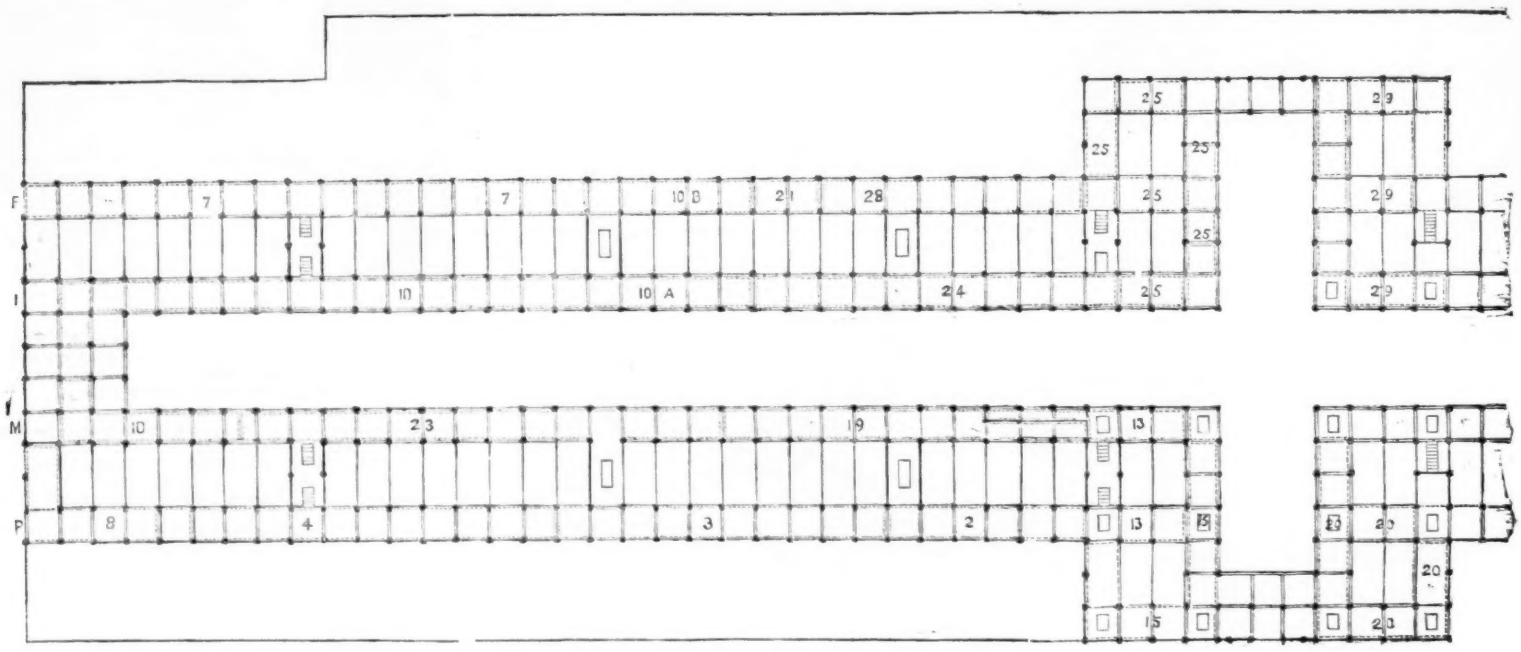
Div. A.—Wind instruments
B.—Stringed instruments
C.—Keyed instruments with fixed tones
D—Instruments of percussion
Div. E.—Automatic instruments
F.—Miscellaneous articles in connection with musical instruments
G.—Musical diagrams

CLASS 10B.—*Horology.*

Div. A.—Great clocks for churches, castles, stables, and public buildings in general
B.—Astronomical clocks
C.—Clocks applied in registration
D.—Clocks shewing different phenomena
E.—Clocks for the common purposes of life
F.—Clocks and timepieces in decorated cases, commonly called ornamental clocks, for drawing rooms, libraries, &c.
Div. G.—Sundries applicable to clocks
H.—Marine chronometers
I.—Pocket watches of various descriptions
J.—Watches for different markets
K.—Miscellaneous

CLASS 10C.—*Surgical Instruments.*

Div. A.—For operations on the ear
B.—Operations on the eye
C.—Operations on the nose, nasal fossæ, and antrum
D.—Operations on the mouth and pharynx
E.—Operations on the thorax and respiratory organs
F.—Operations on the abdominal walls and alimentary canal
Div. G.—Operations on the genito-urinary system in the male
H.—Operations on the genito-urinary system in the female
I.—Operations on the extremities



PLAN OF GALLERY.

REFERENCE TO PLAN OF GALLERY.

F.—North gallery
I.—Central North
M.—Central South
P.—South Gallery

These letters correspond to those used in the alphabetical marking of the bays from north to south.

N.B.—The numbers correspond with those of the respective classes.

RAW MATERIALS.

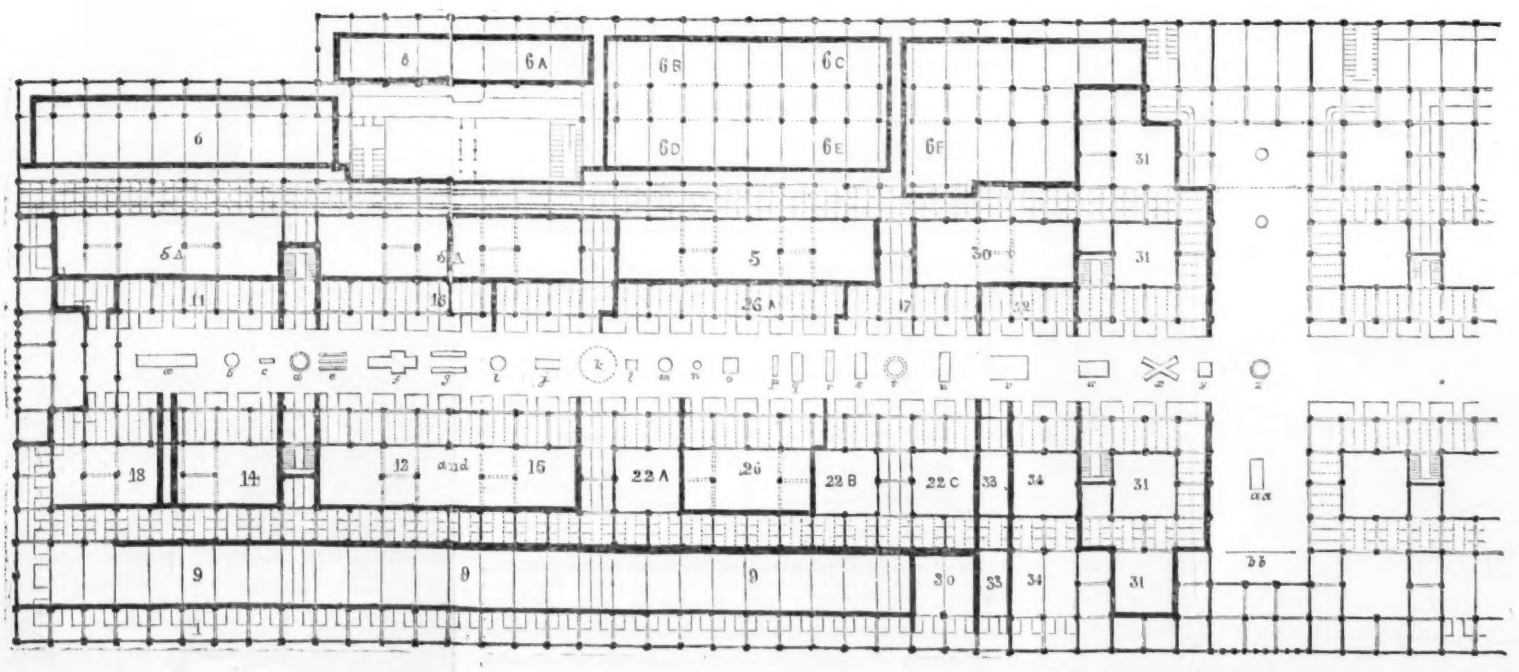
2.—Chemical productions
3.—Vegetable and animal substances used for food
4.—Vegetable and animal substances used in manufactures

MACHINERY.

7.—Civil engineering, &c.
8.—Naval architecture, arms, &c.
10.—Philosophical instruments
10A.—Musical instruments
10B.—Surgical instruments.

MANUFACTURES.

13, 13.—Silk
15, 15, 15.—Shawls
15A.—Mixed fabrics, London and Norwich
19.—Tapestry, lace, &c.
20.—Clothing
21.—Cutlery
23.—Precious metals
24.—Glass
25, 25, 25, 25, 25, 25.—Porcelain, &c.
28.—Animal and vegetable manufactures
29, 29, 129.—Miscellaneous manufactures



PLAN OF GROUND-FLOOR.

REFERENCE TO PLAN OF GROUND-FLOOR.

N.B.—The number correspond with those of the respective Classes.

RAW MATERIALS.

1, 1, 1.—Mineral, Mining, and Metallurgy.

MACHINERY.

5.—Marine engines, hydraulic machines, and brewing apparatus
5A, 5A.—Carriages
5B, 5B.—Locomotives, &c.
6.—Machines in motion—Cotton
6A.—Woollen machines
6B.—Flax machinery
6C.—Silk and lace machinery
6D.—Lathes and tools
6E.—Mills
6F.—Steam-engines
9, 9, 9.—Agricultural implements

MANUFACTURES.

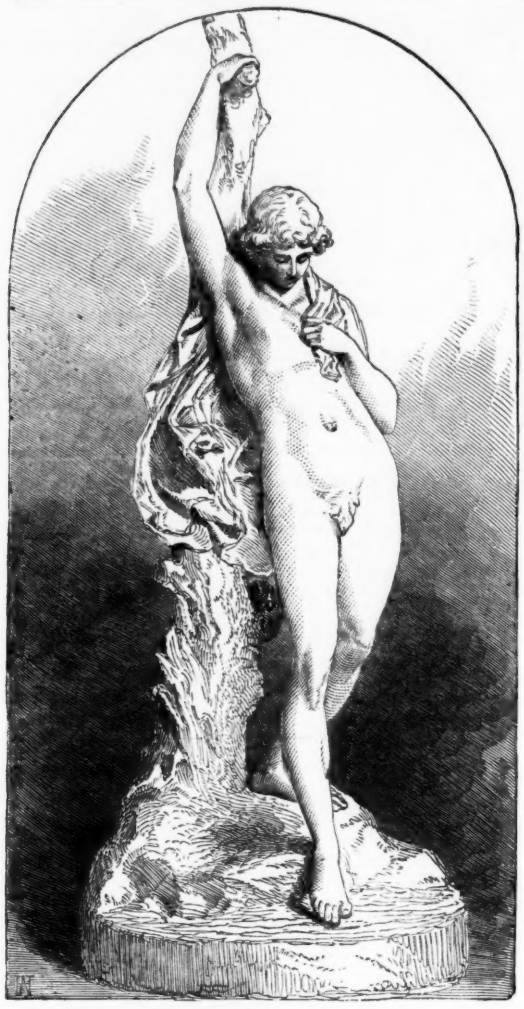
11.—Cotton
12 and 15.—Woollen and mixed fabrics
14.—Flax and hemp
16.—Leather, furs, &c
17.—Paper and printing
18.—Printed fabrics
22, 22, 22.—Hardware
22A.—Sheffield court,
22B.—Birmingham court
22C.—Mediæval court, containing, also, specimens from Classes 27 and 30
26.—Furniture—Metropolis
26A.—Furniture—Provincial towns
27.—Mineral manufactures

FINE ARTS.

30.—Sculpture
30A.—Fine Art court

COLONIES.

31.—East Indies
32.—Ceylon, Malta, &c
33.—Australia
34.—Canada



"BOY AT A STREAM."—BY J. H. FOLEY.

Div. K.—Operations on the osseous system	investigation and treatment of disease
L.—Operations on the vascular system	*Div.* P.—Surgical tables, beds, mattrasses, chairs, cradles, rests, &c.
M.—Autoplastic and orthopœdic operations	Q.—Post-mortem and dissecting instruments and instruments for embalment
N.—Dressing instruments	R.—Instruments applied to veterinary purposes
O.—Miscellaneous philosophical apparatus, applied to the	

This important Class has been judiciously placed between the models, &c. in civil engineering, and those of naval architecture, and forms with them, a grand group of examples of the most ingenious contrivances the mental activity of the present age has produced. The philosophical instruments are ranged in the galleries next the nave, and on each side the large organ placed at the west end, which is itself a type of a large number of contributions to one of the divisions of the class, that of musical instruments.

MANUFACTURES.

CLASS 11.—*Cotton.*

Mr. GEORGE WALLIS. Mr. W. HAWKINS, Assistant.

Div. A.—Cotton yarn and thread	*Div.* E.—Dimities, &c.
B.—Calicoes	F.—Coloured woven cottons
C.—Cords and beaverteens	G.—Oiled calicoes and cambrics for packing
D.—Muslins, &c.	

This Class is placed with the counters and most effective arrangements projecting into the central avenue, and is to the left of the west entrance, occupying the space under the gallery to the carriage courts at the back.

CLASS 12.—*Woollen and Worsted.*

Mr. GEORGE WALLIS. Mr. W. HAWKINS, Assistant.

Div. A.—Broad cloths	*Div.* F.—Serges
B.—Narrow cloths	G.—Tartans
C.—Flannels	H.—Worsted stuff goods
D.—Blankets	I.—Woollen, worsted, alpaca, and mohair yarns
E.—Woollen cloaking	

One of the large courts on the south side of the central avenue has been devoted to this Class and Class 15 (Mixed Fabrics), as the leading manufacturers of the north, or at least the great manufacturing districts, produce the articles arranged under the heads of both classes, and it was deemed desirable not to separate them, except in the special case of shawls. The large space occupied by these two classes being found insufficient, a large portion of the Scotch woollens, tartans, and tweeds have been placed on the north-west wall, near the woollen machinery.

CLASS 13.—*Silk and Woollen.*

Mr. GEORGE WALLIS. Mr. W. HAWKINS, Assistant.

Div. A.—Silk yarns	*Div.* E.—Gauzes and crapes
B.—Plain silks	F.—Plain ribbons
C.—Fancy silks	G.—Fancy ribbons
D.—Velvets	

The rich and varied productions in Class 13 are all placed in the gallery near the transept, at the angle of the south-west division. The Spitalfields contributions being next to the central avenue, and those of Manchester and Macclesfield parallel to them in the side gallery.

CLASS 14.—*Manufactures from Flax and Hemp.*

Mr. GEORGE WALLIS. Mr. W. HAWKINS, Assistant.

Div. A.—Flax fibre	*Div.* E.—Cambrics, cambric and linen handkerchiefs, plain, bordered, and embroidered; plain, printed, or dyed; printed linens, lawns, cambrics, bleached, unbleached, or dyed
B.—Linen yarn and thread	
C.—Plain linen of all widths	
D.—Damasks, diapers, drills, and other twilled linens, bleached, unbleached, and dyed	F.—Cordage of all kinds

This Class, representing the staple trade of the north of Ireland and some portions of Scotland, has been placed on the right of the central avenue, entering at the west door, immediately after Class 18. This arrangement was adopted in order to bring the leading textile products of Ireland into one group, as the poplins, woollens, and even the silks of that country have been placed at the corner of Classes 12 and 15, being separated from this Class by one of the staircases, in the entrance to which the poplin loom is placed, in which is displayed the process of weaving a rich brocade of that material.

CLASS 15.—*Mixed Fabrics, including Shawls, but exclusive of Worsted Goods (Class 12).*

Div. A.—Mixed woven fabrics.	*Div.* B.—Shawls.

It has been already stated that Class 15 is mixed up in the arrangements with Class 12. The shawls, however, both printed and woven, are placed in the galleries near the transept, grouping with the silks. The Paisley productions occupy the corner to the west of the transept, whilst the London contributions are placed at the side at a right angle with the metropolitan silks. The Norwich contributions are also placed here, the dress fabrics forming with London another group in the midst of Class 20.

"MASSACRE OF THE INNOCENTS."—EXHIBITED BY THE ART-UNION OF LONDON.

CLASS 16.—*Leather, including Saddlery and Harness, Skins, Fur, Feathers, and Hair.*

Mr. DODD.

Div. A.—Leather.	*Div.* D.—Skins and fur.
B.—Saddlery and harness.	E.—Feathers.
C.—Miscellaneous.	F.—Hair.

The articles comprised in the above Class are placed on the left of the central avenue, entering from the west, and follow the cottons, being separated from the latter by a staircase.

CLASS 17.—*Paper and Stationery, Printing and Bookbinding.*

Mr. OWEN JONES.

Div. A.—Paper in the raw state, as it leaves the mill	*Div.* D.—Paper and scaleboard boxes, cartons, cartonnerie
B.—Articles of stationery	E.—Printing (not including Fine Art Printing)
C.—Pasteboards, cards, &c.	F.—Bookbinding, &c.

This Class is placed between the colonial contributions and the provincial furniture, on the same side of the central avenue as Class 16.

CLASS 18.—*Woven, Spun, Felted, and Laid Fabrics, when shown as Specimens of Printing and Dyeing.*

Mr. GEORGE WALLIS. Mr. W. HAWKINS, Assistant.

Div. A.—Printing or dyeing of woollen or any mixed substances, as mousseline de soie, or alpaca mixture	*Div.* C.—Dyed cotton goods
	D.—Dyed linen goods
	E.—Dyeing or printing of leather, hair, fur, &c.
B.—Printed calicoes, cambrics, muslins, velvets, and velveteens	

This important department of our industrial and artistic productions has been located to the right of the west entrance, and on the opposite side of the central avenue to cotton manufactures. One of the courts has been divided between this Class and Class 14; the two being separated by a passage, leading to the hardware and agricultural implements.

CLASS 19.—*Tapestry, including Carpets and Floor-cloths, Lace, Embroidery, Fancy and Industrial Work.*

Mr. OWEN JONES. Mr. LOWE.

Div. A.—Tapestry	*Div.* D.—Embroidery
B.—Lace	E.—Fringes, &c.
C.—Sewed and tamboured muslins	F.—Fancy and industrial works

The varied and interesting examples in this Class are placed in the gallery next to the central avenue, running from the metropolitan silks to the contributions in the precious metals. Carpets, however, are used, more or less, in the decoration of the Building, or are suspended from the girders of the roof above the galleries in various parts.

CLASS 20.—*Articles of Clothing for Immediate, Personal, or Domestic Use.*

Mr. GEORGE WALLIS. Mr. W. HAWKINS.

Div. A.—Hats, caps, and bonnets	*Div.* D.—Boots, shoes, and lasts
B.—Hosiery	E.—Under clothing
C.—Gloves	F.—Upper clothing

"ARIADNE."—BY KIRK.

This class has been placed in the galleries, and balances the shawls and silks, these being placed on one side of the large tree at the central entrance, and Class 20 on the other.

CLASS 21.—*Cutlery and Edge Tools.*

Mr. R. THOMPSON.

Div. A.—Cutlery: such as knives and forks, pen and pocket knives, scissors, shears, and razors	*Div.* B.—Files, and other small edge tools not included in manufacturing tools in Section 6

Cutlery and edge tools generally have been arranged in the north gallery.

CLASS 22.—*Iron and General Hardware.*

Mr. R. THOMPSON.

Div. A.—Brass manufacture	*Div.* D.—Steel manufacture
B.—Copper, zinc, tin, pewter, and general braziery	E.—Buttons, &c.
C.—Iron manufacture. (See, also, 1 and 5)	F.—Wire-work, &c.

The extensive and miscellaneous character of the contributions in this Class has been well provided for by its being placed in the avenue under the side gallery in the south-west division, thus separating, by a very distinct line, the textile fabrics and furniture from the agricultural department. Birmingham and Sheffield occupy distinct localities on each side of the metropolitan display of furniture.

"ROSAMUNDA."—BY JOHN THOMAS.

"DOROTHEA."—BY JOHN BELL.

CLASS 23.—*Working in Precious Metals and in their Imitations; Jewellery, and all articles of Virtu and Luxury, not included in the other Juries.*

Mr. LOWE.

Div. A.—Communion services.
B.—Articles of gold and silver plate, for decorative purposes and presentation pieces.
C.—Smaller articles for more general domestic use.
D.—Electro-plated goods of all descriptions, comprehending all that can be executed in silver and other metals.
E.—Sheffield and other plated goods.
F.—Gilt and ormolu work.
G.—Jewellery.
Div. H.—Ornaments and toys worked in iron, steel, and any other metal which are neither precious metals nor imitations of them; as, chatelaines of steel, chains of steel, sword-hilts, cut steel shoe and knee-buckles, Berlin iron ornaments, chains, bracelets, and necklaces.
I.—Enamelling and damascene work.
J.—Articles of use or curiosity not included in the previous enumeration.

The important and valuable contributions comprised in this Class are placed in the gallery next the nave on the south-west side, and extend occasionally to the cross galleries or bridges.

IONIAN ISLANDS BROOCH.

CLASS 24.—*Glass.*

Lieut. PASLEY, R.E.

Div. A.—Window glass, including sheet glass, crown glass, and coloured sheet glass
B.—Painted and other kinds of ornamental window glass
C.—Cast plate glass
D.—Bottle glass
Div. E.—Glass for chemical and philosophical apparatus
F.—Flint glass, or crystal, with or without lead; white, coloured, and ornamented, for table vases, &c.
G.—Optical glass, flint and crown

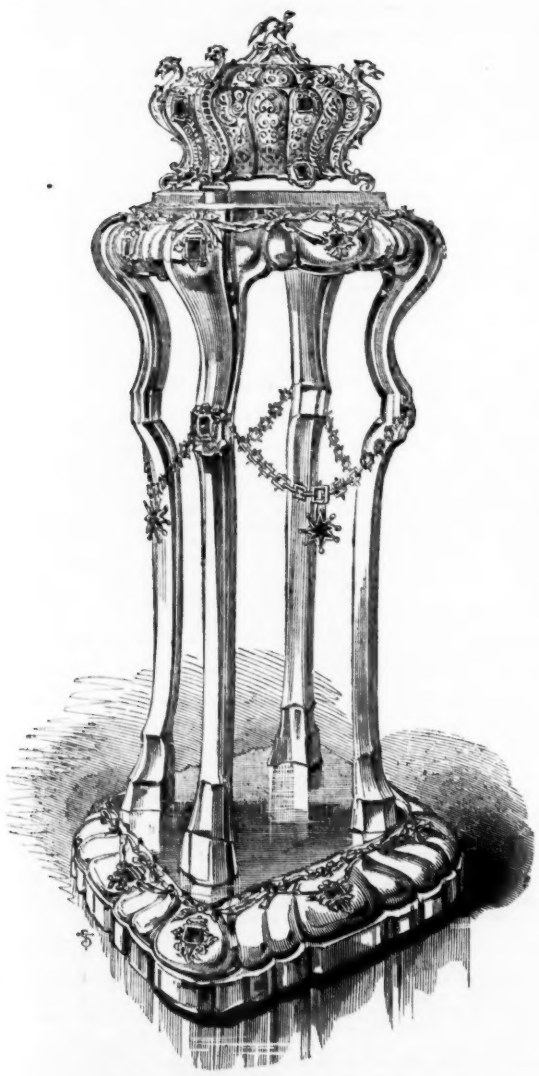
This Class has been arranged in the gallery next the central avenue on the north-west side, immediately above the colonial department.

CLASS 25.—*Ceramic Manufacture—Porcelain, Earthenware, &c.*

Lieut. PASLEY, R.E.

Div. A.—Porcelain, hard
B.—Statuary porcelain
C.—Tender porcelain
D.—Stoneware, glazed and unglazed
Div. E.—Earthenware
F.—Terra cotta
G.—Ornamented or decorated
H.—Productions for agricultural purposes

The examples of manufacture in this important class are arranged in the galleries on the north-west side of the transept, thus occupying a prominent position in the arrangements, and forming a well-defined group.



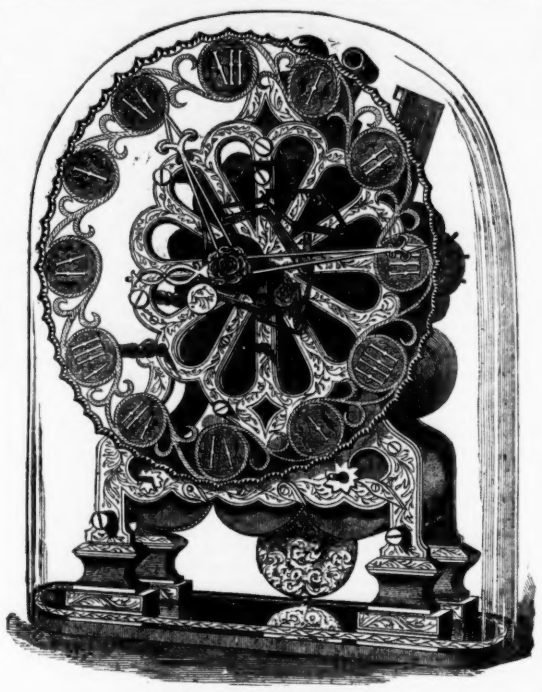
CASKET AND STAND.—BY WERTHEIMER.

CLASS 26.—*Decorative Furniture and Upholstery, including Paper-Hangings, Papier Maché, and Japanned Goods.*

Mr. T. THOMPSON.

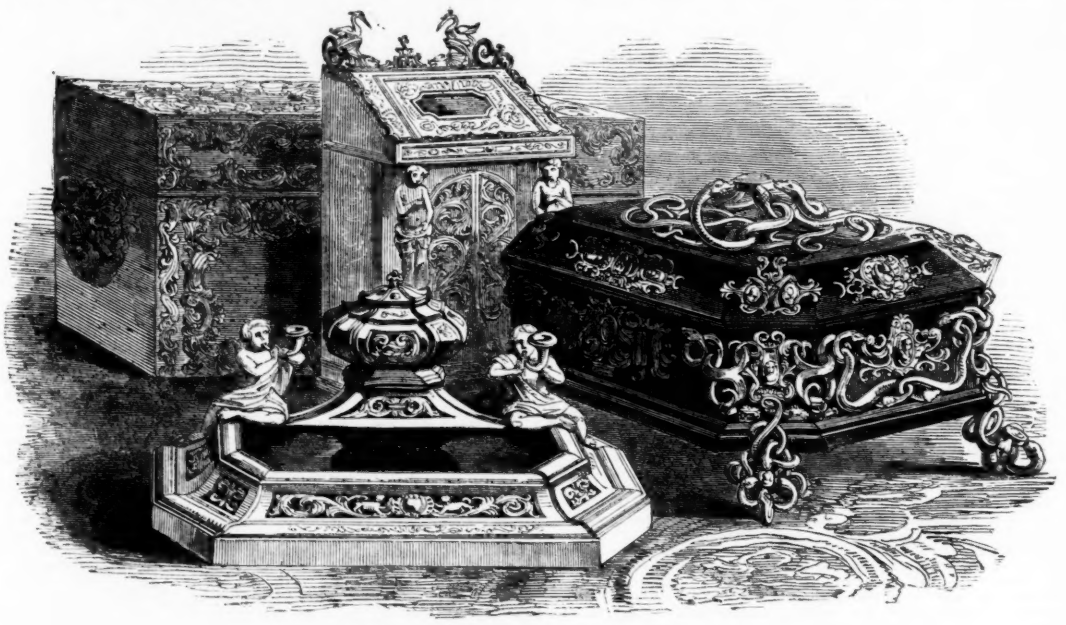
Div. A.—Decoration generally, including ecclesiastical decoration
B.—Furniture and upholstery
Div. C.—Paper-hangings
D.—Papier maché, japanned goods, pearl and tortoiseshell work

This Class is divided into two distinct parts, both of which are arranged next to the central avenue—one being devoted to the productions



CLOCK.—BY MESSRS. MOORE.

of the metropolis, and the other to those of the provinces. A court at the back of one portion of the metropolitan division has been set apart for the illustration of modern revivals of mediæval design in furniture, metals, and decoration generally; in which Messrs. Pugin, Crace, Hardman, Minton, and others have united their respective contributions for the production of a complete group.



DRESSING-CASE, INKSTAND, CASKETS, &C.—BY C. ASPREY.

Div. D.—General manufactures from wood (not being furniture)
E.—Manufactures from straw, grass, and other similar materials
Div. F.—Miscellaneous manufactures from animal and vegetable substances

The examples of animal and vegetable substances, as wrought into articles of use or ornament, has been arranged under the above heads, in the north gallery of the north-west division, between Classes 21 and 25.

CLASS 29.—*Miscellaneous Manufactures and Smallwares.*

Mr. DODD.

Div. A.—Perfumery and soap
B.—Articles for personal use, as writing-desks, dressing-cases, work-boxes, when not exhibited in connexion with precious metals (23) and travelling gear generally
Div. C.—Artificial flowers
D.—Candles, and other means of giving light
E.—Confectionery of all kinds
F.—Beads and toys, when not of hardware, fans, &c.
Div. G.—Umbrellas, parasols, walking-sticks, &c.
H. Fishing tackle of all kinds, archery, &c.
I.—Games of all kinds
J.—Other miscellaneous manufactures

The contributions under the above heads have been placed in galleries on the north-eastern side of the transept, leading onward to the foreign side of the Building.

TEA SERVICE AND CLARET-JUG.—BY WIDDOWSON AND VEALE.

CLASS 27.—*Manufactures in Mineral Substances used for Building or Decoration, as in Marble, Slate, Porphyries, Cements, Artificial Stones, &c.*

Professor ANSTED.

Div. A.—Manufactures in common stone
B.—Manufactures in slate
C.—Manufactures in cement and artificial stone
D.—Manufactures in marbles, granite, porphyries, alabaster, spar, &c., for useful or ornamental purposes
E.—Inlaid work in stone, marble, and other mineral substances
Div. F.—Ornamental work in plaster, composition, scagliola, imitation marble, &c.
G.—Combinations of iron and other metals with glass and other substances, for various useful purposes

JEWELLED BOXES.—EAST INDIA COMPANY.

The beautiful examples of skill and industry which might have been anticipated would result from the manufacture of the rich and varied mineral stores of the United Kingdom, as thus classified, have been arranged next the central avenue, on the north side, between Classes 16 and 26.

CLASS 28.—*Manufactures from Animal and Vegetable Substances, not being Woven, Felted, or included in other Sections.*

Mr. T. THOMPSON.

Div. A.—Manufactures from caoutchouc
B. Manufactures from gutta percha.
Div. C.—Manufactures from ivory, tortoiseshell, shells, bone, horn, bristles, and vegetable ivory

FINE ARTS.

CLASS 30.—*Sculpture, Models, and Plastic Art.*

Mr. OWEN JONES. The Sculpture being arranged by Mr. JOHN BELL, *vice* Sir RICHARD WESTMACOTT.

Div. A.—Sculpture as a fine art
B.—Works in die-sinking, intaglios
C.—Architectural decorations
D.—Mosaics and inlaid works
E.—Enamels
Div. F.—Materials and processes applicable to the fine arts generally, including fine art printing, printing in colours, &c.
G.—Models

The numerous and valuable contributions in this Class are chiefly used to decorate the Building. Ceiling and wall decorations are therefore to be found in various localities, whilst examples of sculpture occupy suitable positions at various points. There are, however, two points at which an arrangement has been made of groups of examples of Fine Art, an apartment having been constructed on the south side of the avenue under the gallery in the south-west division, at the end of the agricultural department. In this apartment various examples of sculpture are arranged. In the more miscellaneous departments of Fine Art and Design, as applied to manufacture, the contributions are arranged in a court devoted to that purpose at the back of Class 17.

Having thus gone fairly through the great features of the classification adopted in the arrangements, and given brief but accurate indications of the general localities, it is desirable that a still more distinct understanding of the position of the respective groups should be arrived at; and to provide means for this, we insert a plan of the ground-floor of the western side of the Building and the transept, as also of the gallery on the same side, thus giving the whole of that portion devoted to the United Kingdom and the Colonies, the references to which will be found to correspond with the indications above given.

A little consideration will at once show that the very nature of the construction of the building suggests its subdivision into courts; and this is distinctly illustrated in the plan of the gallery, on looking to that portion of the plan between 23 in central south gallery (M) and 4 in the south gallery (P), when it will be seen that the staircase on the west, and the bridge from 3 to 23 on the east, gives the boundary in conjunction with the galleries of the court in which Classes 12 and 15 are placed on the ground-floor; and that there are four of these large courts, and two smaller ones, parallel with the transept in each of these western divisions of the Building; and that from the gallery these courts form a most interesting feature in the arrangements. It will not be sufficient, however, for the visitor to know the general locality of a group, but, if possible, he ought to be enabled to ascertain the precise locality of each exhibitor; it is therefore essential that the official arrangements for this purpose should be clearly understood, inasmuch as it is contemplated that the catalogue shall give the exact bay or square of 24 feet in which each exhibitor is placed. These bays are indicated in the gallery and under it by squares formed by the spot representing the columns. In the courts no columns exist in the centre; but, as each court is only two bays or 48 feet across, the eye easily identifies the square sought for, provided the method is once understood. Thus, on looking at the plan of the ground-floor, and running the eye from north to south at the west end, it will be seen that each square is marked with a letter, commencing with A at the extreme north, and with C at the north-west corner, terminating with S at the south-west corner.

From west to east numbers are used for each bay, commencing with 1 and proceeding to 77. Each bay, then, has a letter and a number, by which it is known; and on looking at the accompanying diagram of the south-west corner of the Building, a key will be found to the whole art and mystery of reading off these letters and numbers when seen upon the columns in the building, as each column is so marked.

Assuming that the visitor requires to find the precise locality of an exhibitor of damask table-linen from Belfast, and the locality of that exhibitor is described in the catalogue as N 7, he immediately finds the letter N on the plan, and runs his eye along in a horizontal direction until it reaches the square or bay immediately over 7, as indicated by the dotted line in the diagram, and the position of the exhibitor is at once ascertained. This illustration, then, will, we trust, be amply sufficient; should it not, however, it will surely be understood when we go to the extreme south-west corner, and see S on the west side of the square or bay, and 1 on the south side, and learn that this bay is S 1.

The foundation for our superstructure of description being thus far fairly laid, it may be useful to take such a general glance at the vast edifice in which the wonders of science, the beauties of art, and the highest achievements of the industry of the age are now located—itself a marvellous example of all these, since it is based on science, constructed by industry, and perfected by art. A few years ago, it would have been a physical impossibility to have got the required amount of material together; and we here see displayed in a remarkable manner the results of the removal of those fiscal restrictions which kept our glass trade at a standstill for two hundred years, and made a material so essential to the health, the cleanliness, and the comfort of a people, a comparative rarity. The restriction being removed, how completely the manufacture of glass has developed itself, the Crystal Palace is an astonishing demonstration; and when we look to the illustrations of the artistic results, as displayed in the higher examples of this department of our national industry, no one would wish for a better example of the repressive character of all Excise laws bearing upon the undeveloped energies of any manufacture; and inasmuch as these restrictions on glass are amongst the things that *once were*, we trust that the results here displayed will teach a lesson to our financial statesmen—if they are indeed capable of appreciating the teaching—and cause them to bethink themselves whether there are not other departments of trade in a similar position to that in which the glass trade was six years ago: thus inducing them to consider how far the interests of a large body of our industrious population may not be promoted by the removal of a restriction ten times more absurd than that of glass—the duty on paper. For when we remember that in the manufacture of japanned *papier maché* England stands unrivalled, as this Exhibition will certainly prove, and that this restriction has a very marked effect on this trade alone, to say nothing of those undeveloped modes of employing paper as a decorative, and even as a constructive agent, not yet even dreamt of, the importance of this question of the paper duty forces itself upon us, since we cannot but remember what the glass trade once was, and now is, and feel indignant when we think what the paper trade is, and what it might be; and that, too, apart from any consideration of the ordinary, but most important modes of illustrating its impolicy, in the restriction of knowledge and limitation of the information of the people; although we thus find that it restricts the exercise of their industry and skill also. On these points we shall have more to say when specially reviewing the examples of glass and *papier maché* manufacture; but the comparison will force itself upon the mind now, since this Palace of Industry never would have been, had the unwise restriction on the chief material of which it is constructed been continued.

Looking at the interior of the Building as a whole, one of the features which first strikes the spectator, and this was more remarkable before the roof was covered with canvas, is the perfect daylight effect which, though now subdued, characterises the whole Building. We cannot but think, however, that some mistake has arisen in covering the Building with unbleached, or, as it is technically called, *grey* cloth, since there is a yellow hue pervading the light, which is highly detrimental to certain classes of goods; and we have no hesitation in saying, that, had a striped ticking, similar to the covering around the bole of the large tree at the entrance, been used, the effect of the light would have been far superior to what it now is, and Mr. Owen Jones's scheme of colour been more perfectly carried out. Surely those who had the management of this matter understood that *grey* cloth was not a grey colour, but that it partook largely of a cream colour, instead of a neutral tone. Be this as it may, the colour of the light is, in many respects, very objectionable, and nothing but the cool tones in which the Building is painted could have possibly redeemed it from utter condemnation. The scheme of decoration adopted, after much discussion by those who *did*, and still more by those who *did not* know anything about the question at issue, has proved, with the modifications judiciously introduced in consequence of the loud protestations then made, more successful than even those who, in the main, agreed with Mr. Jones, anticipated. The colour is sufficiently brilliant to give lightness and purity of effect, whilst it is sufficiently retiring at even moderate distances to act rather as a background to the examples exhibited, than as a rival polychromatic attraction, as it was feared might have been the case. Any attempt to decorate the building or make such arrangements as should have nullified the fact that *the Building was for the Exhibition, and not the Exhibition for the Building*, would have signally failed. Happily, in the midst of some forgetfulness of this axiom, there were those who steadily and unflinchingly kept this point in view, and never forgot that the Exhibition was not a mere show, a whim of the hour, or for the glorification of any individual or body of individuals, but a great moral and industrial demonstration, in which the facts to be brought forward were to have the first consideration, and that the building was a Mansion of the Nations, where the inventor, the artist, the artisan, and manufacturer were to appear as invited and honoured guests, not as servants or subordinates. Happily this result has been so far achieved, and nothing strikes the spectator more forcibly than the fact, that, as a whole, that great element of beauty, fitness, has been fully realised. The whole work comes well together, and, from whatever point it is viewed, the vastness of the structure, the extent of the arrangements, and the variety of objects displayed, all go to make one complete whole, which impresses the mind with sensations of the highest character.

There are three points from which this result can be realised by the spectator. First, and by far the most perfect, is the view from the cross gallery at the eastern end, looking down the nave. The whole array of special works placed in the central avenue is here seen to great advantage, the objects giving a distinct but beautifully broken line up the centre of the picture, the long lines of roof and columns carrying the eye into the distance, the breadth of effect only rendered more palpable by the brilliant breaks of colour arising from the display of richly decorated fabrics. The eye of the spectator rests with peculiar satisfaction on the bold and energetic action of the colossal horse and rider, the Godfrey de Bouillon of M. Simonis, contrasting as it does in colour with the deep-toned bronze of the Amazon of Kiss, and the colossal lion of Müller, as yet unstained and unsophisticated as it came from the mould.

The second view is at the corresponding point at the western end of the Building, from the side of the great organ. The *coup d'œil* from this point is, however, to our minds sadly marred by the Coalbrookdale dome being placed so nearly half-way between the transept and the west end, as if to interrupt the view, without giving, as it might have done, value to the objects around, had it been placed nearer to the west end. The very central position of such an object is as great a mistake as placing the chief object in a picture exactly in the centre of the plane, and the result is the same. Still, this point will have its admirers; and with the wonderfully elaborate model of the docks of Liverpool inviting to descend for a closer inspection—the prismatic effects of the revolving lights—the liquid glories of Seeley's fountain—not to mention minor, but scarcely less interesting matters—all tend to make up a scene which the mind can scarcely realise, and, in spite of the conviction that all is real, the visitor is compelled to doubt.

The third point of importance is from the south gallery of the transept, standing under the large tree. From this point the great glory of the structure, the arched roof of the transept (for which it ought ever to be held in grateful remembrance, we are indebted to that model opponent of the Exhibition, the honourable and military member for Lincoln) displays itself in all its beauty and grandeur of proportion; and now that the trees have put on their summer dress, and that too much earlier than their kindred outside, as if in honour of the occasion, the effect of the whole is quite enchanting; and, however much the necessity for cutting down a single tree was to be regretted, we cannot but rejoice now that it was done, since double value has been given to those which remain.

We have now to take a glance at the external arrangements, and to understand their relation to the internal economy of the Exhibition. With three entrances, a central, western, and eastern one, there are thirteen exits, so distributed as to allow the egress of visitors to be spread in pretty equal proportions over the four sides of the Building. These exit doors, with windows on each side, break the line of panelling, and give an architectural feature to an otherwise low line of *façade*, exceedingly low, indeed, in relation to the proportions of the transept, which, externally as internally, is the great feature of the Building. The effect of the stained and varnished panels constituting the external walls, which, when required, can be easily removed and filled with glass, is very excellent, and contrasts well with the painted columns of the construction; we cannot, however, but think it a mistake to have painted the inside and outside of an edifice like this with the same colours, and especially in such light tones, for they are totally unsuited to a climate like ours. This discrepancy is the more striking on looking at the transept, which partakes in too large a degree of the *twelfth-cake* school of decoration; but which might have been easily avoided, and more solidity of appearance obtained, by adopting a suggestion made by Mr. Sang for the decoration of the interior—the preservation of the metallic type, which, though not quite suitable to the purposes of the latter, would have been much more in place for the exterior, than the present duplication of the internal colouring. The line of distinction between the outside and the inside would then have been more complete than at present, and the effect of the latter would have been considerably enhanced by the contrast. This is especially striking after viewing the western or eastern ends, as seen from the road, and afterwards entering the Building at either of these points; for it is felt at once that there is a sameness of colouring, which even the brilliant contrasts of the arranged contributions cannot at once destroy.

The small trees left standing along the whole front of the Building are certainly very much out of place, since there is no room for their future growth; and if the Building be converted into a winter garden, as in all probability it will be, the whole of them should be cut down, and their places supplied with Lombardy poplars, as the only tree suited to the confined space between the road and the external walls.

The point at which every visitor should enter the Building for the first time is certainly the central, or south, entrance, opposite Prince's Gate. This is very ingeniously formed by the columns supporting the elevation of the transept. The bases are made architectural in character, to a height corresponding with the upper line of the "luffer" boards, running along the base of the Building; the intervals above the portico, in a line with the upper ventilators, being filled with panelling. This gives a certain degree of solidity to the design, very desirable at this point. The entrance is on a level with the road; and the floor is paved with large Llangollen flag-stones, as specimens of that material. The ascent to the level of the floor of the interior is by steps of oak, the pay-boxes for the money-takers being to the right and left of the centre, in which stands the bole of a large elm tree: a gallery runs over head, and forms the roof of the entrance.

There are four pay-boxes on each side, connected with an internal queue, by which the crowding together of large bodies of expectant visitors is avoided as much as possible.

THE TRANSEPT.

Hurried, but not impatient, we pass a pair of richly gilded iron gates, and the full glories of the transept burst upon our view, heightened and magnified by the narrow dimensions of the external roof and vestibule. A vast hall is before us, lined on either hand with sculptured forms. In the centre rises, like some fantastic stalactite or splinter from an iceberg, a transparent crystal fountain, glittering with all the colours of the rainbow, which, towering from a solid base up to a point, pours down upon an overflowing crystal basin an unceasing stream, with a delicious bubbling sound. Beyond the fountain stands the chair of state—a throne of crimson and gold, commanding the grand avenues both east and west. On the left of the throne, at the head of the eastern avenue, the great Indian diamond, the Koh-i-Noor, glitters in a golden cage or prison. Other statues, another fountain of huge spouting stone tritons, a mass of broad-leaved tropical plants, and lofty, smooth-barked palm-trees, another pair of gilded gates, and over all a mighty elm, spreading its full-leaved branches far and wide, and touching the very summit of the lofty roof, complete our first impression of the scene—but not the scene itself, for every glance reveals some new effect, gorgeous or graceful. Our eyes travel at one moment to the semi-transparent roof, with its delicate arches of blue and white, and spider-like diagonal bracing lines; then they rest upon the pendant tapestry above the galleries, the rich carpets and brocades; or follow the crimson lines of the gallery rails, till they weary with the luxuriance of colour animate and inaminate, for all this time silk, satin, and velvet plumes and flowers, borne by gazers as curious as ourselves, are streaming all around. At length we reach the ground, and we are recalled to the real purpose of this Fairy Palace by the word "India" at the head of the British, and "Egypt" at the head of the Foreign Avenue; both making a rich display of arms—the first manufacture of semi-barbarous nations.

The striking central avenue, east and west, challenges attention; and, were it possible, for the time being, to attain to that state of dual individualism which would enable us to visit two places at once, we believe there would quickly be a complete duplication of visitors, one half of each going west, and the other going east. As, however, there are great difficulties in the way of this rapid method, we must content ourselves with a selection, and, in spite of the temptation of the various striking objects on the eastern, or foreign side, of which a glimpse is obtained when standing at the point where the nave and transept intersect each other, we turn west, to view the leading trophies of the skill of our own countrymen; before doing so, we cannot but apologise to our foreign guests, since they ought to have received the earliest attention. Yet, when it is considered how much has to be seen, the late period, too, at which the greater mass of the contributions were arranged, and, to a certain extent, the incomplete state in which certain divisions still are, it can scarcely be considered neglectful not to describe or notice works seen under such serious disadvantages, and might even be considered premature. Despite, then, of our desire to do the fullest possible justice, and pay the greatest attention to the productions of our industrial brethren of France, Germany, and the Continent generally, to say nothing of the rich produce and ingenious inventions of our transatlantic compeers, it is decidedly preferable that the arrangements on the British and Colonial side, as being most complete at the earliest period, should receive first attention, with such occasional glances of comparison at the corresponding articles on the foreign side, as may render the description more perfect, as more useful and instructive.

It was a very happy idea, this arrangement in the central avenue of certain leading objects, either individually or in groups, as trophies of the marvels assembled; thus giving in one continuous line an epitome of the whole classification: and certainly the result is all that could have been expected from such an arrangement, since in this continuous line of the third of a mile, we have an exhibition in itself, a marvel and a wonder—which a few years, or even months ago, no mortal, however sanguine or imaginative, could have anticipated.

As it will be necessary in due course to particularise those various contributions which claim the greatest amount of attention and consideration, in the rapid glance we are about to take at the most important points, criticism is not our present object. To tell our readers what to see, and afterwards to tell them how to see it, is the task undertaken. The first is the more immediate question.

Proceeding westward, then, from that crystal marvel, Osler's Glass Fountain, we must lead the visitor to the extreme west; the various objects arranged in the centre striking the eye in rapid succession, from the silk trophy of Messrs. Keith and Co. to the great mirror at the end under Willis's grand organ. This silk trophy is a novelty, and stands as the type of the textile fabrics of Great Britain and Ireland. It was originally intended, that, as each trophy would represent a particular class or manufacture, exhibitors in those departments should unite to form a complete type of their trade. Thus, the silk trophy was intended to have been contributed to by the various manufacturers of Spitalfields, and would thus have been a fitting representation of the silk trade in all its branches. Practical and technical difficulties, however, had to be overcome, in bringing together products so varied as those of the loom, even in one material; and Messrs. Keith and Co., as manufacturers of the largest kind of silk goods for furniture damasks, undertook the whole work, the construction and arrangement of which is based on a suggestion and sketches made by the superintendent of textile fabrics, Mr. George Wallis, and subsequently improved upon and extended to the present structure by Messrs. Laugher, Dwyer, and Co., of Poland-street, to whom the merit of the practical realisation in its present form is due. The whole is hung with the richest silk damasks, brocatelles, tabarets, &c., to the height of upwards of fifty feet; the sides of the base being filled in with mirrors of the largest dimensions, reflecting, at certain angles, the draped arrangement, and surmounted by flags and a banner, the central one being emblazoned with the Royal arms. In order to effect the regular re-arrangement of the whole at stated periods, the structure is so contrived, that, by ladders placed inside, the requisite work can be effected with comparatively little trouble in a short space of time.

This trophy stands between two bronzes of very different character—the statue of the Duke of Rutland by Davis, and a very clever group of a horse and dragon, by Wyatt, intended, we presume, to typify the triumph of the intellectual powers over the lower and more sensual propensities of our nature, since the horse is the symbol of the one, and the traditional dragon that of the other. As, however, notices of individual works belong to the future portion of our task, attention only is called to these works.

The Colonial or Canadian trophy is the next object of interest, and is formed of specimens of the timber with which our North American colonies supply us. These examples are cut into such slabs as may at once show their wrought and unwrought character, one side of each being duly finished and varnished or polished. Among these specimens are two contributions by a fugitive slave, settled in Canada. This group of raw products is placed in the midst of the Colonial Department; and the materials, though interesting from their utility, were certainly very unpromising ones for the formation of a trophy having any pretensions to symmetry or artistic effect; but the difficulty has been got over much better than might have been expected, and the whole is surmounted by a small canoe.

Passing the large mirror, with its elaborately ornamented framing and gilding, the spandril from Hereford Cathedral, placed at the back, cannot fail to attract the attention of the lover of ecclesiastical decoration. Mr. Thomas's fountain, the subject of which is the story of Acis and Galatæa, stands next, and is a work of no mean excellence. To do it justice, however, a recurrence must be made to it in future notices.

A beautifully carved mediæval cross, designed by Pugin, comes next in order. The subjects of the relievi are beautifully appropriate, and the whole is an excellent example of stone carving. The next object is a kindred one, being a Gothic screen executed by the Patent Machine Carving Company (Jordan's); and grouped at the sides are excellent examples of the results of the same process as applied to general decoration.

The "Eldon and Stowell" group, two colossal portrait statues of those eminent brothers, the late Earl of Eldon and Lord Stowell, is well placed in the central avenue, as the work is a bold and massive one. The draperies are grand in their arrangement, and there is a repose in the whole subject which is highly satisfactory. The artist, the late M. L. Watson, was not known or appreciated to the extent which this work and another we shall take occasion to notice when visiting the sculpture, proves he ought to have been. This, alas! is the old story; and his talent is now fully recognised, when it is no longer available to us, or of any value to him.

The specimen of Honduras mahogany, several large pillars of alum, and some examples of chemical products, will astonish the curious in those matters; whilst Dent's Turret Clock, and the Sheffield trophy—a grand group of cutlery, &c., by the celebrated house of Rogers and Sons—form admirable contrasts to these huge productions of nature and science.

The Coalbrook Dale dome—a most conspicuous object from all parts of the Building commanding a view of the central avenue—as an example of constructive metal casting, is worthy of all praise. We wish we could say as much for the design as a work of art, although, in many parts, there is much to admire. The statue of the "Eagle Slayer," by John Bell, is placed in the centre; but, as this is one of those works to which, as a whole, recurrence must be made at some future period, and with ample Illustrations, to render criticism intelligible, we pass on, after calling attention to Mr. Bell's ideal statue of Shakspeare, placed on the eastern side of the dome—a pleasing work, but of more pretension than power.

An equestrian group, representing a dead Crusader, his horse and mistress, illustrates a painful episode of bygone times; whilst the great telescope placed next to it as distinctly illustrates the glorious pursuits of modern science, her aims and triumphs.

The glass cases containing splendid selections of furs by Nicolay, and feathers by Adcock, will be attractive to thousands. The former is a remarkable example of ingenuity in arrangement, the case being supported round the base by preserved animals. At this point, too, the magnificent furs suspended from the galleries will attract the attention of the visitor.

The use of terra cotta as a decorative adjunct in building, is admirably displayed by the model of a church in the decorated style, the whole idea being well and thoroughly carried out, and the application of this material as a constructive agent very fully exemplified. Having seen and examined a church so constructed, near Bolton, Lancashire, built by the contributors of this model, Messrs. Willock, of the Lady Shore works, we can bear testimony to its excellence in many respects, although, like all artificial materials, it has its disadvantages. For garden decorations, there is no material better adapted for general use; and with the progress made of late years, particularly by the enterprising firm to whom we are indebted for this example of skill, it is wonderful that the many elegant decorations adapted to ornamental grounds are not more generally used than they are, since we find elegance combined with cheapness, and, under all circumstances, with durability also.

The next object, a model made by Mr. Jabez James, of Broadwall, of a suspension-bridge erected over the river Dnieper, at Kieff, in South Russia, designed by Mr. C. Vignolles, is the most perfect thing of the kind in the Building. A similar model to the one exhibited was made for the Emperor of Russia, and cost upwards of £12,000. The scale is $\frac{1}{4}$th of an inch; all the details are imitated with such nicety, even in the size of the nails and the threads of the screws, that from it a perfect copy of the original bridge might be executed on a full scale, without any written description. The abutments take to pieces, to show the construction of the masonry and the chambers for the chains. It contains 6830 pieces of wood, and 87,097 pieces of metal. Before the construction of the suspension-bridge at Kieff, a bridge of boats was in use, the river being 1200 feet wide. Mr. James, the modeller, received

a ruby and diamond ring, valued at £200, from the Emperor, on the arrival of the first model, which is now set up in the Winter Palace at St. Petersburgh. The model of the Britannia Bridge, although less elaborate, is equally exact in scale. Between the two stands a model of Mr. Brunel's bridge over the Wye, at Chepstow.

The large and massive fountain, by Seeley, constructed of artificial stone, will astonish and delight a large number of visitors. The whole work is at once an example of skill in construction and fitness of design.

The model of the Lord Mayor's state barge, by Searle, will have its admirers, particularly in those who delight in civic decorations.

In this rapid sketch of the leading objects in the western side of the central avenue, the revolving lights have been overlooked.

The very elaborate and costly model of the Liverpool Docks and the commercial part of that town is a remarkable example of the extent to which the economy of our great cities may be illustrated and permanently recorded. This admirable work originated in a desire on the part of certain patriotic gentlemen of Liverpool, that this great port, the outlet of so large a portion of our trade, and the scene of so important a part of the commercial transactions of this country, should be fairly represented in the Exhibition. As, however, Liverpool has no staple trade properly so speaking, but exists and owes its importance to the diffusion of the products of other localities, rather than by the productions of its own, the suggestion that the extent of its means for promoting the great purposes of international communication should be illustrated was a very happy one, and has been most admirably carried out by its originator and designer, Mr. John Grantham, C.E., a gentleman who has acted as honorary secretary to the Exhibition committee at Liverpool, and spared no pains to do honour to this great occasion. Upon a scale of eight feet to a mile, we have, then, an accurate representation of the docks of Liverpool, and the most important commercial part of the town, including St. George's Hall and the Railway Station, the Town-hall, Custom-house, St. John's Market, and several of the churches; the shipping lying in the docks, or floating, to all appearance, on the surface of the Mersey, which is represented by the silvering of coloured glass. The model is supported on an appropriately designed base formed of elephants, cast in iron, from the backs of which the columnar supports of the roof arise; pediments, filled with appropriate decorations in imitation of bas-reliefs, being at the ends and centre. Future descriptions will render this great and important contribution more familiar to our readers—a work which does honour to the merchant princes of Liverpool, and which is intended to be eventually deposited in St. George's Hall, as a record of this assemblage of all which constitutes the basis of its greatness, its wealth, and practical utility.

A specimen of plate glass of extraordinary size is placed against the columns supporting the cross at this end, and the whole scene through which we have so far journeyed is reflected with great effect.

Standing at this point the whole length of the Building is seen, and the result is in the highest degree impressive and beautiful. It is to be regretted, however, that the sides of the central avenue have not been kept more clear of projecting objects, as in many instances one or two of these projections interfere with the whole range, and are anything but sightly. As a whole, however, more has been done in this direction than could have reasonably been expected, since each exhibitor would desire to display his own contributions in the very best possible position, and have as little regard to those around him as the regulations would permit. To our mind the British side is a wonderful exemplification of British character, and the notions each man entertains of his own freedom and independance of action. Like our street architects, each has run up his own erection in his own way, and it has only been by a constant supervision, that anything like an *ensemble* has been obtained. Bedposts and conservatories, glass cases, iron rods, and sign-boards, appear to have formed the stock notions of the best mode of construction, and these have only been worked into a presentable form by a variety of modifications. Again, the substantial character of many of these erections strikes at once. If the whole Exhibition was intended to remain *en permanence*, and the exhibitors contemplated that their great-grandchildren would display their industry and their genius in the space assigned to themselves to-day, they could not have more effectually provided for such a contingency. These fittings, therefore, form a remarkable contrast to many of those on the foreign side, which are remarkable for lightness, elegance, and remarkable fitness for their purposes.

SCULPTURE.

The contributions in sculpture are very numerous, and, those disposed in prominent positions throughout the nave and transepts, add much to the beauty of the general aspect of the Building. As we shall, from time to time, present our readers with Engravings from many of these works, we shall not enter upon minute description or criticism in the present notice, but content ourselves with indicating some of the principal subjects which strike the eye of the visitor as he passes through the avenues.

In the centre of the south transept, Mr. Thornycroft's equestrian statue of the Queen commands attention. The horse is a portrait of one presented to her Majesty by the King of Prussia, six years ago. On the left, amongst various others, is one of some ambition by Mr. Stephens, "Satan tempting Eve;" the latter a recumbent figure, as asleep or in a trance. Near the point of junction with the nave is a marble group of considerable merit, by Joseph Engel, a Hungarian by birth, but who has studied for some years in this country. It represents an episode of the war between the Amazons and Argonauts. A sister in arms is supposed to have come to the rescue of another Amazon, whom she bears in her arms, whilst struck with pity for the prostrate Argonaut, she suspends the blow which was aimed to destroy him.

In the north transept are casts for equestrian statues of her Majesty and Prince Albert, by Mr. James Wyatt. In the rear is Mr. John Bell's beautiful statue of "Andromeda," in bronze, cast at the works of the Coalbrook Dale Company. The pedestal is of exquisite design, and richly chased and engraved. This work will deservedly attract a large share of public attention. In this portion of the building will also be noticed an "Adam," by Mr. E. J. Physick; an "Ancient Briton," looking out as a Scout, by Mr. Adams; "Abel and Thirza," by Mr. Earle; and several other pieces, of more or less originality and merit.

At the opening to the western portion of the nave we are struck with a very graceful "Venus and Cupid," by Mr. E. Davis, being, we believe, lieve, the only work executed in marble, by a British artist, in this country, expressly, and without commission, for this Exhibition. We next come upon a "Horse and Dragon," in bronze, by Mr. Wyatt, senior; a production of remarkable merit, truthful and full of fire. Next in order is the same artist's beautiful portrait of the favourite dog of the late Lord Dudley and Ward, a work of immense labour and cost. One of the most interesting works in this portion of the building is the restoration of a portion of the monument of Philippa of Hainault, Queen of Edward III., in Westminster Abbey, executed from the drawings and under the direction of Mr. George G. Scott, by Mr. Samuel Cundy; the figures by Mr. John Philip.

Turning to the eastern portion of the nave we remark, on the right hand of the point of intersection, Mr. Macdowell's figure of Virginius at the moment of having slain his daughter—a figure full of energy, and with great dignity in the expression. At a little distance down a colossal statue of Queen Victoria, cast in zinc, at the works of the Montagne Zinc Mining Company, of Paris. This remarkable work, which has the appearance of polished steel, stands with the pedestal twenty-one feet high. The figure was designed by D'Anton *aîné*, the pedestal by Le Norman. Another very beautiful contribution from our Gallic neighbours, is a Venus and Cupid, in bronze, by J. Pradier, the composition of which is original and very elegant. This artist exhibits several other works deserving of attention. M. Etex has a large group of considerable merit, but of a most painful subject—no other than the cholera! His characteristic, in this and other works here exhibited, appears to be that rare gift, expression. In this department of the Building, which is richer in works of sculpture than any other part, are several other pieces, which call for honourable mention. Amongst the most conspicuous stands M. Simoni's colossal equestrian figure of Godfrey de Bouillon," Pierrotti's "Mazeppa," the "Amazon" on horseback attacked by a lioness, a subject worked out with extraordinary vigour, by Kiss, of Berlin, and others which we cannot enumerate at present.

Certainly no person acquainted with the arts of this country can suppose for a moment that the specimens of sculpture exhibited on this occasion really represent the present position of this art amongst us; not that this position is anything upon which we could afford to be very congratulatory, supposing all the best men of the present day were thoroughly represented, which they certainly are not. With a few very honourable and pleasing exceptions, our examples of the plastic arts in their highest manifestation are below what could have been conceived; and the redeeming features only serve to prove the rule more fully by contrast. In glancing through the various examples scattered through the Building, the contrast of power and weakness, even in the same work, strikes every observant person; and, when the sculpture room is visited, the impression becomes settled, that, with much to admire, there is also very much to find fault with and to condemn.

This Sculpture Room, or court, is a well-defined apartment, of goodly dimensions, in which the works are arranged with discrimination and effect. The light wants concentration, and in many respects the examples suffer accordingly; but, on the whole, few will have any cause for complaint. The traditionary deep-toned background has been preserved, and no perilous innovations in the way of colour or effect have been attempted, although this might have been reasonably expected, and the ordinary dungeon-like appearance of the conventional sculpture gallery might have been improved on an occasion like this.

The works which we have selected for Engraving in the present Number are:—John Bell's "Dorothea," a work of much excellence, though more imitative in its treatment than is consistent with the highest development of the art; Kirk's "Ariadne," a pleasing specimen of this artist's style; T. K. Foley's "Boy at a Stream," an extremely graceful production; the "Massacre of the Innocents," exhibited by the Art Union of London, being one of the competing subjects for their prizes of £100 and £50; and "Rosamunda," by John Thomas, without doubt, one of his best works, the attitude being dignified and graceful. The costume is of somewhat mediæval character—the same feeling pervading the ornamental details of the drapery, &c.

ARCHITECTURAL DECORATION.

As forming an important and highly interesting portion of the Fine Art Class, and in immediate connexion with sculpture, come the various methods of architectural decoration, and more especially those departments which belong to the adornment of the interiors of our dwellings. It is astonishing what an immense advance has been made in the pursuits connected with house decoration during the past ten or twelve years. From very indifferent imitations of woods and marbles—from ugly mouldings affecting to be very classic, and being in reality only very *rococo*—and in colour, from a system of universal drabs, we have emerged into something approaching to an artistic style in our house embellishments; and, whilst progressing in elegance, have not as yet certainly run into extravagance: an error always to be feared, unless constantly kept *in terrorem* before the eyes of those who, in seeking to be equal to their neighbours on the one hand, desire to outshine them on the other. A few years ago the upholsterer was the only professional decorator, and even now the dictum of the mere dealer in furniture is too frequently taken in preference to the opinion of the artist, let him have made this question of beauty, as combined with utility in the embellishments of every day life, ever so much his study. Happily, people begin to think, that, when about to expend large sums in decorating houses, it can do no harm, and may possibly do much good, to have the opinion, at least, of some one who understands the relation of the respective parts of a room or its decorations to the whole; and that simply filling a house with furniture, painting or papering the walls of any colour, getting silk hangings and carpets, without reference to design in themselves or congruity with the articles around, is not precisely the best mode of expending money to advantage, or obtaining a good and pleasing result when all is completed.

The demand for elegance, then, has created the very thing required; and the admirable specimens displayed in this Exhibition, in almost every available style of decoration, is a sufficient proof that we are beginning to appreciate the importance of those decorative adjuncts, by which an educated and refined people have ever been distinguished from their less advanced neighbours. Ceiling decorations predominate; and, inasmuch as they could be so easily introduced under the galleries, and with such good effect, there can be no doubt that many of our best decorative artists were induced to contribute specimens of their skill. Decidedly the most perfect display of its kind, on the British side, is the ceiling and walls of the bay under the Central North Gallery, fitted up by Messrs. Jackson, of Rathbone-place, whose great reputation as the manufacturers of *carton pierre* ornaments and decorations is well sustained in the elaborate works here displayed. The carved ceiling which constitutes the roof of this compartment is an admirable specimen of skill in execution, as of talent in design. The figures, animals, and flowers, introduced as adjuncts to the ornaments, so combine with them as to produce a oneness of effect throughout; and the exquisite character of these ornaments is enhanced—and not, as too frequently, destroyed—by the introduction of these figures. The specimens of ceiling flowers, cornices, string-courses, and mouldings are all excellent; and the examples of caryatides—a detail in ornament generally marred in the execution—are vigorous adaptations of the human figure to that not over rational, but so frequently used, ornament. In future Numbers we hope to be enabled to give Illustrations of several of the specimens referred to, and to examine them more in detail.

There are several other relievo ceilings. One, composed of pendents, has very many excellent points, and the colouring introduced adds to the effect. Some of the others would have been much better away, except that they may serve as dust bins for the dirt which will percolate through the floor of the gallery, and thus prove useful in defending the articles below from the effects of the riddle-like gapings of boards above—a nuisance of no ordinary character to the exhibitors of textile manufactures, and one which requires the attention of the Executive or their contractor.

Under the central south gallery, and leading to the metropolitan furniture court, are several admirably painted ceilings, the arabesque decorations of which are in general admirably designed and painted. One of these, by Galli, is an excellent example of the manner in which an artist possessing the requisite invention and skill of hand can make his art subservient to the embellishment of the useful, without losing in any degree that position which his vocation ought to ensure him. In this ceiling we have a rare combination of the most elaborately imitative power, not obtrusively used, but ably combined with the ideal in invention for the perfect elaboration of a distinct theme; so the whole constitutes a picture of more than ordinary pretensions. The subject of the ceiling is a series of portraits of British literary and artistic celebrities, fitly introduced in medallions. There is, however, a want of individuality in some of these, which can be more readily discussed in future detailed criticisms: we may, however, call especial attention to the admirable design and beautiful execution of the angle ornaments, and the figures introduced therewith. As examples of pure ornamental treatment, they are excellent. There are several other ceilings of a less elaborate character to be hereafter noticed in detail, all more or less worthy of attention; and at the west end of the Building, after passing through the end of the court appropriated to printed fabrics, a group of decorations will be found of no ordinary pretensions—the ceiling more especially is a chaste and beautiful example of design and colour. In this work there is a homogeneity of effect, which certainly, with all their excellence, does not characterise the wall decoration of the same exhibitors, Messrs. Hay, of Edinburgh. This arises, in all probability, from a very common cause of failure in these matters. An able artist paints the leading features, a group of fruit or flowers, a figure, or a central ornament, and then leaves the remainder, or those parts which are considered subordinate, to an assistant, who may or may not be equal to his work. The result is a frequent incongruity of tone or treatment, which after touching will not remedy. The ceiling quoted is an excellent example of the work of one hand, or a perfect union of two. The wall decorations, though very excellent, betray the work of two or three hands not in harmony with each other.

Wall decorations form a leading feature of the south wall, along the line of avenue leading through the mineral department. Here are decorations in various styles and modes of treatment, both in relievo and painting; and along the side of the sculpture gallery are some admirable decorations in printed paper-hangings, the designs for which are of a first-rate character, based, as the more elaborate of them are, upon a strict observation of nature, without being merely natural in treatment. On this point we shall have much to say in the course of our notices, since there is nothing more true than that the public generally do not know what true ornament is, and that even our professors of design appear to have very vague notions thereupon; the natural, the conventional, and the geometric being either one and the same, or distinctly individual, according to the peculiar notions of each.

To the Furniture Departments we would now especially direct the attention of the visitor; and, though it is quite impossible to give even a glance at the leading features of the display, until we have had time and opportunity for a more leisurely survey, it may be useful to indicate such points of attraction as may prove useful. The court enclosed between the Sheffield and Birmingham contributions, devoted to furniture, will prove a most attractive feature in the Exhibition; and comparisons will arise between the works here displayed, as well as the elaborate carvings exhibited in the Fine Art Court, and those sent from France and Germany, of which the suite of rooms in the Austrian division is, probably, the most remarkable example. We would, urge, then, the examination of these examples of British skill prior to visiting the foreign examples; not for the purpose of impressing the mind of the visitor with a prejudice in favour of our own examples, but, inasmuch as these are made up of details, he will better understand and appreciate the effect of the wholeness which characterises the Austrian examples in particular.

In our next, we hope to give a good general idea of the whole arrangement of furniture, including the Mediæval Court, in which Messrs. Pugin, Crace, Minton, Hardman, and others have combined their skill to produce a result which has certainly no rival in this Exhibition, but which it would be an act of injustice to dismiss with a cursory glance, although we may direct the particular attention of our readers thereto, and assure them that the examples of skill, alike in carvings in wood and stone, gold, silver, and brass work, in woven fabrics and embroidery, in stained glass and mosaics, are of such a character as to at once destroy the oft-repeated fallacy, that we, as a people, are deficient in the faculty of taste, whilst the truth is we have simply neglected it. Hardware manufactures, porcelain and glass, will fitly come in with our notices of these examples of the skill and talent now rising amongst us; and, with these indications of excellent things to come, we must at present content ourselves, in this department at least.

MACHINERY.

The display of machinery and mechanical contrivances which occupies the north-western portion of the ground-floor of the "Industrial Museum" is by far the most beautiful and interesting which has ever been witnessed in this or in any other country, and is alone sufficient to render the great International Exhibition worthy of many visits. Whatever may be produced in other departments of the Exhibition by our foreign competitors, certain it is that in mechanics we shall bear the palm. To the indefatigable exertions of Mr. Hensman, and his assistant Mr. Biddle, much is due. No exertion has been spared on the part of these gentlemen to accommodate, as far as possible, every exhibitor. On Saturday last the steam from the boiler-house, at upwards of 50 lb. pressure, was introduced for the first time into the main pipes. These pipes, with the branches to the various machines which will be in motion during the continuance of the Exhibition, extend to several hundred feet in length.

The whole length of the space allotted to machinery is upwards of 800 feet, and the depth varies from 48 feet to 192 feet in different parts.

In the published plan of the arrangements the boiler-house is shown as quite close to the Great Exhibition Building, but is upwards of 150 feet distant therefrom.

The area of the machinery department is arranged, for the sake of classification, in various compartments, the whole being divided into two distinct divisions by a line of railway, for the locomotives and railway carriage department. The north side of the railway is devoted to the machinery in motion, including the Oldham and Manchester cotton machinery, which is to the extreme west; next, the cotton and woollen machinery, and the flax, silk, and lace machinery, respectively, which are close to the northern *wooden wall* of the Building. Printing machines, lathes and tools, marine engines, hydraulic machines, mills, and steam-engines complete the northern portion of this department; while, on the south side of the railway are common road carriages, marine engines, and brewing apparatus.

In the present notice we are unable to do more than take a cursory glance at the multiplicity of the machines already alluded to; but on future occasions all the more beautiful specimens will be fully described and illustrated.

Almost all the principal manufacturing engineers in the kingdom have lent their aid towards effecting this great national display of British mechanical skill. Thus we find Boulton and Watt's magnificent 700 horse-power engines, together with two models, one representing the *first* locomotive engine in 1785, and the other an oscillatory engine, from the Soho works. Maudslay and Field's exquisite models of their double cylinder marine engine, their beam engine and annular piston-rod, with other interesting contrivances. Whitworth's celebrated planing, boring, drilling, and other engineering tools. Sharp Brothers' slotting and punching machines. Hicks and Co.'s specimens of punching cold iron of extraordinary thickness. Bryan Donkins manufacture of the Birmingham disc engine; and another specimen of the same rotary engine by Mr. Bishop, who superintended that at the *Times* office, by which the vertical printing machine of Applegath is actuated. Penn's oscillatory engines, so well known by all steam-boat travellers on the mighty Thames. The great Britannia hydraulic press, from the Bank Quay Foundry, exhibited by the enterprising firm owning that establishment, at an enormous cost, the weight of this gigantic machine being about sixty tons, and requiring the power of sixty horses to remove it from the North-Western Railway to the Exhibition Building. The sugar-mills of Collinge, and the sugar-cane pressing machine of Robinson. Appold's beautiful little pump, already so well known in the mechanical world. Crawhall's vertical rope-making machine. The marine engines of Slaughter and Atherton. The derrick crane of Henderson, already described in the ILLUSTRATED LONDON NEWS, and which has been of such great use during the construction of the Building; and the novel and useful segmented crane of Fairbairn. Smith's original screw-propeller, which has caused such great changes in steam navigation. Bessemer's centrifugal disc pump. Bellhouse's hydraulic presses, and wheel cutting machinery. Westrup's economical corn-mill, by which a great national benefit will be effected, by a vast saving of flour annually, and which, by all other modes of grinding, is entirely wasted. Applegath's vertical printing machine, by which the Exhibition Supplements of the ILLUSTRATED LONDON NEWS will be printed during the Exhibition. This beautiful machine, which in principle is the same as that daily in use at the *Times* office, is surrounded by a dwarf enclosure, within which are all the appurtenances of a printing-office. Several copies of the ILLUSTRATED LONDON NEWS are thrown off at each revolution of the cylinder, which is placed vertically; the blank sheets of paper are placed over a horizontal drum, pass down between two sets of vertical rollers and tapes, thence continuing to the horizontal cylinder, which contains the type and also the cuts, which form a novelty in this particular machine. The wood, instead of having a flat surface, is curved to the same extent as that of the type, and the artist is required to arrange the lines of his drawing accordingly. The messenger rollers receive the ink from the ductor rollers, from which the ink is received on the surface of the inking-table. We have thought it necessary to say thus much as to this machine, which is one of the most interesting in the whole collection, and will attract great attention.

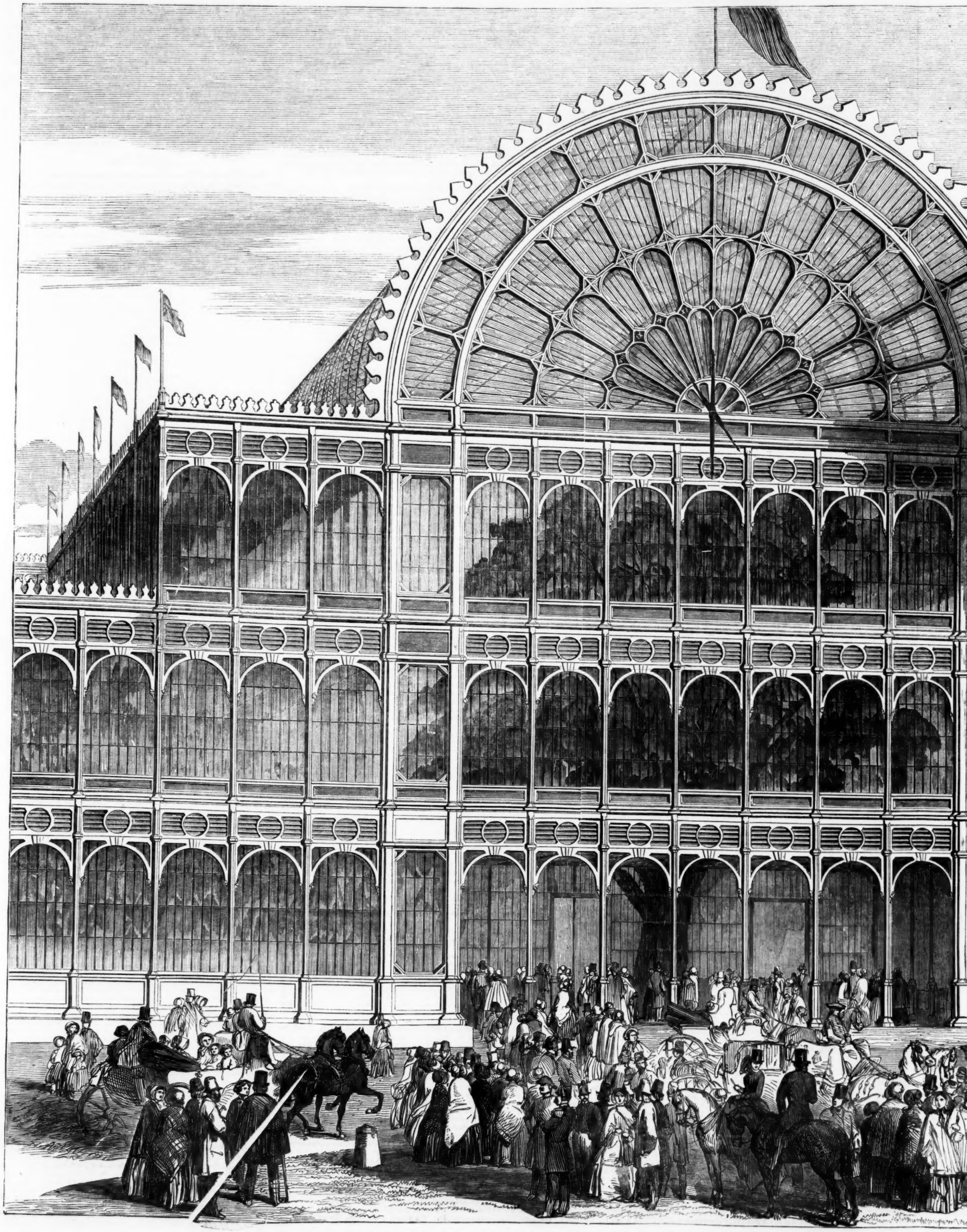
We must not omit to mention, specially for the benefit of amateur turners, the unique and beautiful collection of lathes, and samples of turning in ivory, from the celebrated establishment of Holtzapffel, Longacre, which occupy a good position in the mechanical department.

In the railway department we first observe the most improved kinds of permanent way, both for the narrow and broad gauge. Turn-tables from the great works of Ransome and May, of Ipswich; gigantic locomotive engines, from the works of Stephenson, Bury and Kennedy, and Trevithic—a name intimately connected with the gradual developement of the powers of the steam-engine in the earlier stages of the invention; all the above being constructed on Crampton's principle, which is at length recognised by most of the great railway authorities. Then there are engines from Hawthorn, of Newcastle, one of the earliest and best manufacturers in the kingdom; Fairbairn, of Manchester, and Wilson, of Leeds. Again, for branch lines of railway, there are locomotives on Adams's plan, by which the additional carriage, called a tender, is dispensed with; and the "Little England," by England and Co., on the same plan of construction. The railway carriage department is chiefly represented by the great "London and Europe Carriage," placed on eight wheels, and divided into numerous compartments, the whole being divided and jointed in the middle, to enable the carriage to take the curves of the South-Eastern Railway. As if this carriage were intended to be carried across the Channel, it is distinguished by the panels being almost covered with the names of all the principal European cities.

The common road carriages include every kind of vehicle, from Anderson's Aberdeen car to Gower's commodious omnibus. Crosskell's wheels also occupy a conspicuous place in this part of the Exhibition.

RAILWAY WAGGONS.

While passing over without criticism the other locomotives exhibited, we shall find it worth while to dwell for a moment upon their adjuncts, the carriages and waggons which stand on the same line of rails, very gay with decorations—as smart as heraldic emblazonments, and gold and blue steel springs, can make them. The fashion of unpainted wood, plainly varnished, first introduced on the Great Northern, seems making general way, not only in railway vehicles, but in road carriages and agricultural carts. There are examples in a first-class carriage of teak, and two waggons, one in teak and the other in mahogany. The latest change has been the introduction of corrugated iron, which is both strong and comparatively light. Mr. M'Connel, the engineer-in-chief at Wolverton, has sent a composite carriage of this material, lined with wood, which



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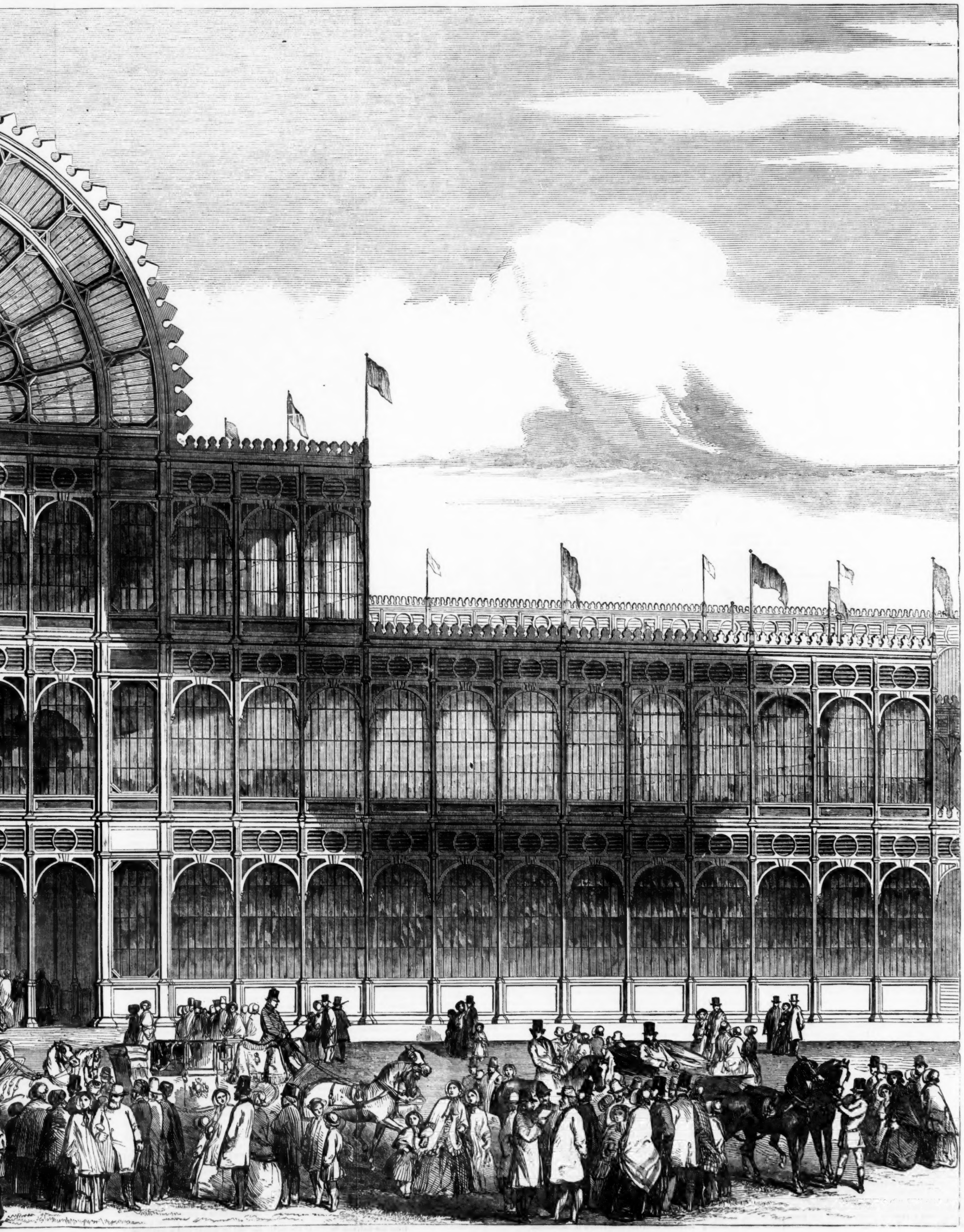


OF THE GREAT EXHIBITION BUILDING.

holds 60 second and 16 first-class passengers, beside a guard's van, which will hold five more if needed—all carried on six wheels. The arrangements for getting round curves with the centre wheels are worth examination. This carriage is said to be 35 per cent. lighter than an ordinary vehicle of the same capacity. If practice proves it to be durable and economical, the advantage will be enormous; for dead weight, viz. unprofitable weight, is an enemy that has been constantly encroaching on railway profits and preventing reduction in railway fares. Next to the carriages stand a set of waggons, which will be the instruments of a revolution in the railway carrying system; for they form complete bonded warehouses on wheels, impervious to weather and the attacks of any thieves less audacious than professional burglars, for the walls and roofs are strong, and a bolt and lock, at one motion, make the whole affair as secure as locks and bars can. Gay as the arrangements of these carriages are, adorned with the flags of all nations contributing to the Exhibition, and with appropriate mottoes, they are, nevertheless, honest waggons, veritable specimens, except in ornament, of 600 of the same patent actually at work on the North-Western line. These carriages were invented and patented by Mr. Henson, to remedy more than one serious drawback in our carrying system, of which the first was an inheritance from the canals—that is to say, *loss by pilferage*.

During the "good old times" of canal and river navigation, and, we may add, of many-horsed road-waggons, robbery was reduced to such a system, that it came to be regarded not as a robbery but as a perquisite, by the boatmen and waggoners who shared the plunder. The publicans in remote places on the canal sides, and on the navigation of rivers like the Severn, grew rich by dealing in the *perquisites*. On one canal, boxes packed by the aid of an hydraulic press, with tin plates, were regularly mulcted of a percentage of their contents, to the amazement of the manufacturer; for without hydraulic power, it seemed impossible to re-pack the boxes, if once they were unscrewed. At length it was discovered that a scientific rascal had turned a lock close to a tunnel into an hydraulic press, and with the help of the boat's mast placed against the ceiling of the tunnel, by letting on water as required, forced down the lid of each box after he had taken his tithe. To send any kind of valuable liquor by canal, without its being tapped and adulterated with canal water, was impossible. Indeed, there was as good sherry, as prime old East Indian Madeira, as aromatic ancient Jamaica rum, to be had at certain petty taverns close to canal locks, as in any great house in Portman or Grosvenor-squares.

It was hoped that the rapid railway transit, the neat, regularly-paid servants, so unlike the canal bargees, would secure carriers from this kind of felonious toll. But unfortunately, while borrowing and improving the railway system of the north, we borrowed without improving the little square boxes on wheels, open at top, to carry our valuable goods in, which were good enough and safe enough for Wallsend or Lambton's, but scarcely the sort of protection suitable for silks, tea, diamonds, fine china, and gold dust. We did not even take the trouble to put springs or buffers to many of these carriages. We covered them with a tarpaulin, which cost £6, in the morning; in the afternoon a pole was run through it; and at night the rain or snow spoiled a hundred pounds worth of velvets. For want of buffers, china and glass went all to smash; for want of proper covering, even iron was spoiled; indeed, nothing is sooner spoiled for saleable purposes than iron—a little rust, and it become unmarketable. The waggon itself, which always had to stand in the open air when empty, rotted away; and for want of buffer springs, shook to pieces

It was made heavier and heavier; but, as waggon-building was not an engineer's business, no one thought of applying mechanical science, which should make every part useful as a support to such a simple thing as a waggon. But the worst is to come. The parties in charge of these open waggons, or engaged in unloading them, found the temptation too great for their principle. Sometimes valuables were "chucked" to an accomplice at night in a lonely place by the side of the railway: sometimes valuable packets fell accidentally into the straw while unloading on the side opposite to where the carrier's clerk was standing.

We have been speaking in the past sense, but the fact unluckily is, that this robbing system is still going on night and day on most of the railways in the kingdom. Eatables, such as cheese, sugar, tea, and other things that cannot be traced, are tithed wholesale. On one line running through an agricultural district, the cheese lost, stolen, and broken cost the company more than the carriage; on another, a railway servant was found to have an attic full of sugar-loaves and tea.

Of course, for all this pilferage, damage to goods, and damage to waggons, the public pay in some shape or other. The whole community, especially the agricultural and commercial community, are more interested in cheap goods than cheap passenger carriage. Mr. Hensen's carriages meet most of these evils. We should not speak so positively if we did not practically understand the subject, and if the remedy were not so extremely simple. They are provided with good springs and buffers; then every piece of material supports the other, so as to combine all for strength. The plain framing deserves the attention of mechanics. There is one door of ample dimensions for unloading, which is thus easily watched by a trustworthy overlooker. Part of the roof slides back if needed, yet it is quite impervious to wet. It is, in fact, a perfect bonded warehouse on wheels.

AGRICULTURAL IMPLEMENTS.

The agricultural department lies on the south side, and runs nearly the whole length of the western wing.

Whatever be the feelings of the agricultural public with respect to the Exhibition, no agriculturist can enter the part devoted to this important section of manufacturing machines, without acknowledging that in space and situation due regard has been paid to the station of agriculture among useful arts. Never before were implements displayed to so much advantage, and never before was so large and perfect a collection, from the most eminent as well as many unknown, ingenious men, gathered together.

This year the Royal Society of Agriculture exclude implements from their annual show. Having ascertained, by circular, that all the leading manufacturers would send their best work to the Palace of Industry of All Nations, the council wisely resolved not to risk the chance of a falling off from their previous great successes in this department; and thus it is that we have the benefit of the undivided energies of the implement-makers stimulated by a great occasion, and assisted by the peculiar facilities afforded by rail and sea for reaching London from the most remote parts of the kingdom; thus it is, that the long, light room is crowded with specimens of the ironwork of purely agricultural counties.

Of ploughs there is a very strong muster. Every maker has sent a specimen of his best, and many new men have sent single ploughs with some real or imaginary improvement. We may almost trace here the history of the improvement in ploughs, which has been vigorously carried on for a long series of years. The first patent for an improved plough was taken out a hundred and twenty years ago (in 1730); and for the last fifty years, at least one a year has been taken out on a low average. It is impossible not to notice that iron is more used for agricultural implements almost every year.

After looking at the English ploughs, it will be well to walk into the American and Belgian departments. There are sound and ingenious agriculturists to be found in both these countries.

About the middle of the room is a steam digging machine; but, unless it is intended to shovel up soft sand without stones, at a depth of less than four inches, it is difficult to understand how it is to be used with advantage.

Steam-engines for farm-yard use form one of the great features of the display. There are not less than fifteen, some of them of very superior construction and finish. At the first implement exhibition of the Royal Agricultural Society, there were eight steam-engines in the yard the steady increase from that period shows that the system of cutting and steaming food is making progress among the new race of farmers; for it is only by making use of an engine for daily wants that it can be made profitable. It should be observed that some of the best specimens of steam-engines come from purely agricultural counties. There is every reason to believe, that, in the words of one of the best writers on agricultural implements, the time is not "far distant when a steam-engine will be one of the matters to be thought of in every well-conducted farm with 300 or 400 acres of arable land," and smoke from a tall chimney will constantly give notice that the iron horse is engaged in churning, or cutting chaff or roots, or crushing oats or beans, or threshing, dressing corn, or grinding corn, or pumping water, or steaming roots and chaff. As an auxiliary to railway conveyance and telegraphic news, the steam-engine is of great value where wheat is stacked, and not stored in barns, because it may be thrashed out, and sent into the best market at a short notice.

The scarifiers and harrows exhibited are only less numerous than the ploughs: and here again foreigners will be surprised at the manner in which our cheap light iron has superseded heavy clumsy wood. Each celebrated maker has sent one or more drills—an invaluable instrument, which has been carried to great, almost too great perfection, as far as regards ingenuity. For a long time makers rivalled each other in adding some new ingenious complication, but now the sensible farmers prefer simplicity.

Among the clod-crushers are several that seem new without being improvements. One, with a double set of rollers working in each other—the invention of a man of humble means in the north of England—is highly spoken of.

There are some excellent specimens of farm waggons and carts—strong, not too heavy; and fitted with improved axles, drags, and tilting irons. In these, as in railway carriages, unpainted wood well varnished seems coming into use.

Specimens of the best threshing and winnowing machines, of a vast variety of churns, complete sets of draining tools, machines for making tiles; and, indeed, specimens of every implement, and every aid to farming, are to be found in this department; of the more remarkable, novel, and useful of which, detailed notices, illustrated by Engravings, will appear in future Numbers.

After examining the one-horse carts in the agricultural section, it may be as well to step into a court, on the opposite side of the avenue, where there is a capital set of one-horse cart-harness—strong, light, and serviceable. Our cart-harness, generally speaking, wants reform.

The exigences of space, and the arrangements for driving machinery by steam-engines sent for exhibition, have compelled the gentlemen who have had the charge of this department to distribute machines about without much regard to exact order; and we must, therefore, be excused if we are unable to guide the reader in a direct course, as we are not always able to find the same class of inventions in the same group.

WEAVING MACHINES.

The collection of weaving machines, both in the British and Foreign department, affords a very fair illustration of the progress of this branch of mechanical art, and of the interchange of inventions between this country and continental Europe.

The English stocking-frame, worked by hand power, should be first visited; as this, with all the advantages of modern improvements, is still worked on the same principle as that invented, at the close of the sixteenth century, by William Lee, of St. John's College, Cambridge, who was, according to the beautiful legend inscribed in the Stocking-weavers' Hall, which forms the subject of one of Elmore's pictures, induced to develop his mechanical talents by poverty and enforced idleness, while his young wife was knitting stockings. In another part of the same department may be seen the circular rotatory stocking-frame driven by steam power, which weaves stockings, webbing of all kinds, nightcaps, and elastic shirts. The French also show an ingenious improvement of the same principle. But still, William Lee's stocking-frame may be considered the parent of all lace and net machines, however complicated, now in use in the Nottingham trade. A Nottingham mechanic or weaver will trace you down the successive improvements which have at last produced Burkin's lace machinery, with Jacquard adaptation, composed of 110,000 pieces, of which not less than 70,000 are in motion at once, which is capable of weaving the most complicated lace patterns; or we may turn to Sewell's bobbin-lace machine, in which, a few years ago, it was considered good work to make four racks a day of 140 holes each of net, 36 inches wide, and which, by improvements and addition of steam power, will now make five racks an hour of 112 inches wide. It will be shown making beautiful Brussels lace. But one of the greatest triumphs of mechanical ingenuity is exhibited in Ball's rotatory warp lace machine, worked by steam power, which, since 1816 (in the recollection of a Nottingham man at work near it), has been thrown by, or sold for the price of old iron twenty times, and has been again and again rendered valuable by new improvements, until it is now available not only for weaving two kinds of lace, one being fine blond, but a great variety of other goods, including stocking net, which is afterwards cut and sewed, velvet, light worsted cloth for waistcoats, or, to use the metaphor of a young mechanic exhibitor, "anything from a spider's web to a blanket." Mr. Burton exhibits a gassing-machine on Hall's patent. By this machine, after the lace is made, the minute fibres are burned off, thus succeeding in giving the work a finish which adds greatly to its beauty without in the least injuring the delicate fabric. In another part of the section is a machine for starching and drying lace after it has been bleached.

To the valuable display of cotton cloth machinery in motion, an explanatory series of articles will be devoted in a future Number, and due attention will be paid to all the specimens of the manufacturing machinery of textiles, especially flax.

In the Foreign department, the arrangements for setting up and working machinery are generally in so backward a state, that it is impossible to do it justice, although it is already evident that there are many specimens of extraordinary ingenuity, as, for instance, in the French department, a machine for sewing sailcloth, which imitates hand-sewing with marvellous dexterity; and among the contributions from Cologne, a coining-press, on the principle of the knuckle-joint, which, coining at the rate of from thirty to forty a minute, completes the coin and *mills the edge in letters at one motion*. We have previously called attention to the coining-press at work in the English machinery section, where from forty to fifty coins a minute are silently and successively stamped, pushed off, and replaced by another blank disc, in a manner that seemed, until we examined the German press, the perfection of art. But the milling the edge with letters by the motion which forms the die, has not hitherto been effected by English machine makers.

TROPICAL MACHINES.

We will next turn to machines for colonial use and export to tropical regions. It is a matter of the utmost importance to our sugar-growing colonies that they should be able to work up their produce and manufacture in as compact a form as possible—cheaply, rapidly, completely. Formerly the canes were crushed in rude mills, worked by mules or oxen, in so imperfect a manner, that fifty per cent. of the saccharine matter was left in the canes. When the juice was extracted, the boiling process was conducted equally rudely; and when the sugar had been adduced to a semi-liquid state, it was dried, by being allowed to drip from perforated earthen jars. There are several specimens of apparatus constructed on scientific principles, for crushing, boiling, and drying sugar. But among the many ingenious things in this department, we would venture to call attention to Napier's patent for drying sugar, salt, and other semi-liquid substances by an application of centrifugal force. The principle has been patented, and applied to sugar eight years ago; but, in the improved apparatus, of which a model is exhibited, the whole process becomes self-acting. Instead of having first to fill with the liquid, and then empty out the dried sugar from the rotating pan, a pipe duly feeds with the semi-liquid sugar, and the motion which dries the sugar drives the molasses into one receptacle and the dried sugar into another, by a simple yet perfectly complete arrangement, worth the attention not only of West India proprietors and of mechanicians, but of all who like cheap sugar. Here, again, we find the advantage of comparison between the work of different inventors.

SHIP'S CAPSTANS.—At the eastern extremity of the section devoted to machines in motion are two specimens of ship's capstans worked like fire-engines, with a pump handle motion, instead of the old capstan worked by handspikes, which the men pushed against while they ran round, to a lively tune of the ship's fifer, with great exertion, tremendous stamping noise, and occasionally serious accidents, from the weight of the cable overpowering the men, and flinging the handspikes in all directions. The old-fashioned capstan has been superseded in the navy by some one or other of several patent machines. The full-sized one exhibited by a London house seems very good: the turning power, obtained by simple friction-bands, making no noise on the return stroke, worked by two arms that require no shipping and unshipping, which is always so dangerous on a dark night, it has the great advantage of simplicity—there is nothing to clog. Near the capstan is a life-boat, and large model of a cutter.

MINERALS, METALS, AND MINING OPERATIONS.

Commencing at the south-western extremity of the Building, where the numbers begin, there will be found first a number of collections of minerals, chiefly for scientific or educational purposes, with such other collections, as models of crystals, fossils, &c., as are useful in this way. Gems both rough and polished, local geological collections, and sundry objects of interest belonging to what may be termed the outskirts of real industrial products, are here grouped together, and with them are placed some small miscellaneous collections, for which it would be difficult to find a more fit locality. These objects are not without much interest, and we propose in another article to describe many of them in some detail, as they include gems and precious stones, series of minerals from remarkable districts, and many other objects, not only from England, Scotland, and Ireland, but from South America, India, and elsewhere. These are themselves illustrated by models of crystals, and some drawings and diagrams explanatory of new views of crystallography, &c. There is much that is useful as well as attractive in objects of this kind; and the western extremity of Class I. in the British division will, we are sure, be regarded as a fit commencement of the vast series of manufactured minerals that follow in succession.

Next in order to these miscellaneous collections will be found many mineral substances used in, and valuable for, agricultural purposes, including mineral manures, soils, and rocks. With these are, in some cases, placed the vegetable substances grown by their aid; and thus the whole group will be found to present to the agriculturist matters of detail that cannot fail to interest him. These are so near the Agricultural Implements, that the farmer may conveniently step from the examination of the valuable contrivances of mechanical art to those raw materials which nature has provided, or the combinations which the chemist concocts for his benefit.

The whole collection throughout the Building having an industrial rather than a directly scientific character, the visitor must not be surprised at some apparent anomalies in the association of objects; and thus he will see, as a part of the division expressly marked Raw Material, Mineral Kingdom, such objects as a pocket of hops, samples of wheat and other corn, and various similar miscellaneous substances. The different objects forwarded by the same exhibitor must of necessity be kept together as much as possible, and thus results often follow causes in a curious but not uninstructive manner.

Amongst the objects in the commencement of the Mineral series will be found mineral waters, and these with such substances as common salt in the rough native form and in various stages of preparation, and other minerals used in culinary art or in medicine, and not strictly chemical manufactures. It is often difficult to draw a line which shall exactly define this sort of grouping, and in the case before us the magnitude of the objects has more to do with the arrangement than their chemical condition, for the class of chemical manufactures is in the gallery, and it is not wished that any very heavy objects should be placed on the floor in that part of the Building. The enormous blocks of alum weighing some tons, huge pillars of salt, of prussiate of potash, spermaceti, and other gigantic objects requiring a foundation on which to rest, are, therefore, of necessity left down stairs, and placed where their weight can be supported from the solid earth.

Sand, used for various purposes in the arts, fuller's earth, French chalk, and other minerals brought into actual use in a simple or merely purified state, succeed the more miscellaneous group at the commencement of this Class; and many of them will be found worth attention by those who seek to inform themselves concerning the materials which, in various ways, conduce to improve our manufactures, and give them the importance they have long maintained.

Next to these are placed the materials used for drawing or colouring, when derived directly from the mineral kingdom. Black lead, as used for various purposes, drawing chalks, lithographic stones, ochres and other earthy substances used in colouring and dying, all belong to this group, and will be found represented by many good series of objects. They are all grouped together as far as possible, and the black leads include the whole of the processes of manufacture, as well as admirable specimens of the raw material from various quarters. The ochres and earths used as pigments include varieties from several districts.

These are succeeded by a collection of rottenstones, emeries, and other substances used in cutting, grinding, and polishing; and these again by hones, whetstones, and grindstones. A very fine and large collection of the latter will be found; and, besides the smaller ones exhibited inside, are a number of much larger size placed outside the Building in the south inclosure.

The fire clays, brick clays, and other plastic material of this kind, including the varieties used in the manufacture of common and fine earthenware and porcelain, together with specimens of the material manufactured from them, come next in order. Among them are specimens of the Stourbridge clay, so well known, and so valuable for its great power of resisting, uninjured, the action of the most intense heat, and a very interesting series of the materials very commonly manufactured from this clay and used in glass-making. Models of glass-houses and furnaces, and other illustrations of various kinds, complete this part of the series; and we then find a collection of the finer kinds of clay, such as those obtained in Cornwall and Devonshire, and largely exported thence to the Potteries of Staffordshire, Worcestershire, and Newcastle-on-Tyne. Amongst these will also be found some other materials used in the same manufacture, and exhibited as amongst the most valuable mineral produce of our country.

From clays, we proceed next to cements and artificial stones, of which only a part of the series is exhibited here, the rest, and especially the more ornamented effect of which such objects are capable, being shown in Class 27, where, indeed, the processes in all cases of mineral manufacture will be found illustrated. Still there will be found one extremely beautiful and elaborate series of ornamental work in cement, as adapted for various purposes of internal decoration. The materials used for making cement are various kinds of limestone containing clayey matter, and the substance called *gypsum* (identical in composition with alabaster, but not transparent and crystalline). These, however, require to be burnt, and afterwards ground to powder, to render them available. The general principle of this manufacture may be understood by considering that many substances—the earths especially—exist only in a compact solid form when mixed with a certain proportion of water. This may be got rid of by exposure to intense heat, after which, on the addition of water, the powder becomes a solid mass, and binds together various particles of sand, gravel, and other substances mixed with it. The different kinds of cement, their relative hardness, their value for special purposes, and many interesting facts concerning them, together with some beautiful examples of their use, will be found in this part of the Exhibition. The enormous strength of some kinds of cement is well illustrated in some constructions both here and elsewhere.

From the artificial we come to the real stone. The stones of different kinds—granites, marbles, sandstones, limestones, and others—are all to be found in admirable and extensive series. The varieties used for roads, for building, and for decoration, and the polished slabs of the latter, form a set of objects quite as remarkable for their beauty as for their great value to the mason, the builder, the surveyor, and the architect.

Slates form a special group of minerals used in construction, and the general visitor will be astonished at the vast variety of uses in which such material can be conveniently and economically employed. Not only for roofing and such common uses, but for almost every imaginable application of slabs, is slate now made available; and in the gigantic masses outside the Building, in the western inclosure, the vast cisterns there deposited, and the magnificent paving at the central entrance, as well as in the other objects, down to the minute and decorative articles exhibited in the compartment in Class 1, devoted to this mineral, the visitor will have an opportunity of studying a very important and modern application of a substance supplied in almost infinite abundance, and of the finest quality, in many parts of England, Wales, Scotland, and Ireland.

Minerals used as fuel form the last, but by no means the least important group of earthy substances. Like the slates and building materials, but on a far larger scale, the chief objects of this kind, of large size, are placed outside the Building; and those persons to whom coal is only familiar in its ordinary state, as ready for domestic use, will be astonished at the immense blocks of solid coal, and the very different kinds, obtainable. The importance of coal to England cannot possibly be overrated; it is more valuable than any other substance, and, together with iron, it forms the grand basis of our commercial prosperity and national importance. No wonder, then, that the owners of property of this kind, feeling the extent of the interests they represent, have been anxious to impress on the public mind on this occasion a sense of the magnitude if not beauty of their produce. Besides, however, the larger masses, and in a somewhat more useful form, there will be found several series of coal, some of them accompanied by specimens of the ironstone so commonly occurring along with coal in nature, and the association of which with the coal is so important. The collection of coal is preceded by a very interesting series of other bituminous and carbonaceous substances, including the products obtained from peat. An example of the application of bitumen (or asphalt) to pavement may be seen at the eastern entrance of the Building.

We pass on now to the second division of Class 1, that which includes the metals, the substances from which they are obtained, the various methods of mining used in obtaining them, and the various processes through which they pass before arriving at that state in which they go into the hands of the manufacturer. The series of iron ores and manufactured iron; the copper ores, processes of copper smelting and copper in various stages; the tin and modes of converting it; the lead, and the way of obtaining silver from it—all these are exhibited on a large scale, with every modern improvement, and in the most instructive mode. The more precious metals will be found also illustrated, and some new or rare combinations and uses are presented. Several slabs of pure silver, of large size, are exhibited, as obtained during the manufacture of lead.

Perhaps one of the most interesting parts of Class 1 consists of the models of mining operations and mining machinery, of which there are many that will attract general attention. The subject of scientific mining has generally been neglected in this country, though there are many illustrious exceptions; and thus there will not appear quite so systematic a series of these models as might have been hoped. Still, the visitor will be able to see, and even to understand in a general way, how it is that the coal is raised in such large quantities and at so low a cost from the extreme depths of the earth. He will be able to visit a coal-mine

without putting on the dress of the miner, and exposing himself to the fatigue, dirt, and risk that accompany an underground trip; and he will also be able to comprehend something both of the cause and nature of those frightful explosions that sometimes occur, and of the means suggested or adopted for their prevention. From the coal-mines he may pass to those worked for metalliferous ores, and see the ingenious methods that have been adopted for lifting miners from the bowels of the earth, without much individual exertion; the methods of pumping out the water, that often accumulates in almost incredible quantities; the system of rendering merchantable the raw produce of the earth; and the many interesting and beautiful processes adopted with regard to the metals, before they are considered in a fit state for use. All these are placed together, and with them are associated some drawings and other illustrations of quarrying. Mining maps, geological maps, and sections partly cover the walls of the allotment; and within the narrow strip of about 420 feet by 16, belonging to Class 1, there will be found collected a strange variety of minerals and mineral produce, exhibited by several hundred persons, but all tending to illustrate usefully, and in a popular way, the mineral riches of our country.

There is no such uniform and systematic collection of the mineral riches of other countries. Limited, of course, in space, and having to pay large expenses for land carriage and freight, the objects generally sent from the Continent and elsewhere are articles which are less weighty, or, at least, more manufactured. Still, a great many things will be found from different countries. Thus, from China there will be seen a large and most interesting series, illustrating the manufacture of Oriental porcelain. From Australia, the copper ores of the western part of that country. From Brazil, magnificent examples of native silver—one, weighing considerably more than 200 lb., and another weighing 154 lb.—have been sent, and will be shown. From Spain, very interesting series of raw produce, both in stones for building and decoration, in coal, and also in metals, will be found in their proper place. France and America, the two largest exhibitors on the foreign side, have not yet enabled us to judge of their intentions in this respect, but there can be little doubt that they will do justice to the important subject of unmanufactured produce from the mineral kingdom.

The Exhibition will thus be seen to contain a gigantic series of objects, many of them hitherto only accumulated in museums, but all important as the groundwork of national riches. To our soil, our quarries, and our mines we must always refer as the elements of wealth; but it depends on the way these are used, to determine how far these elements are rendered available. The exposing them to observation and investigation is at least one way, and by no means a trifling one, in which the real nature and relative advantages of the raw material may be best judged of.

MINERAL MANUFACTURES.

Under the title "Mineral Manufactures" are included all finished productions in stone, marble, alabaster, spar, slate, granite, and other mineral substances, used, whether commonly or occasionally, for any purposes of construction. To these are also added scagliola, cements, and various imitations of marble and stone, whether plain or decorative; various works in terra cotta, brick clay, fire clay, and porcelain clay; and some miscellaneous objects placed here as the nearest approximation that could be imagined.

Amongst the many attractive spots in the Exhibition, this will be found by no means the least. It opens from a portion of the north side of the central avenue, between "leather" on the west and "furniture" on the east, and stretches back to the railroad on which are placed locomotive engines. It is readily found by its proximity to the great Colebrook-dale dome, and the remarkable combinations of glass prisms serving as a lighthouse.

The objects in this class form three or four well-marked groups, including—1, the marble, spar, granite, porphyry, and other ornamental material, together with inlaid work in marble and spar; 2, manufactures in stone, slate, and other material not admitting of a polish; 3, manufactures in imitation of marble, whether in composition, as scagliola work generally, or in solid material as slate, but used for decoration: 4th, imitation stone in cement and other material; and, lastly, though hardly belonging to the class, all kinds of brick, terra cotta, tiles, and heavy pottery.

These varied objects are collected together and grouped as well as their nature and the limited space would permit; but, in addition to those actually in the court, a very considerable number will be found in the inclosure at the western extremity, where such objects are placed as might be expected to stand exposure to the weather without serious injury.

The objects in this Class are many of them of the most striking kind, and are certain to attract general attention. Belonging to the first group there will be found various articles constructed in the serpentine of the Lizard Point, Cornwall—a stone exceedingly remarkable for its extraordinary beauty and depth of colour, and the large size of the blocks that can be obtained. At the south-western exit will be seen a block of this stone partly polished; but the general visitor will not fail to be struck by the pair of obelisks and font which form, as it were, the entrance posts of the mineral court, and which, with two candelabra immediately adjacent, form the principal frontage of the class. The Cornish serpentines and other softer stones are there well exhibited, and contrast with the magnificent inlaid work from Derbyshire immediately adjacent, in a manner not unfavourable to either.

The materials used in the construction of the richly decorative articles here exhibited are of several kinds. They differ exceedingly in the mode of treatment, and in the objects they are best adapted to express. Amongst the chief objects exhibited are obelisks and candelabra, chimney-pieces, pedestals, vases, and tables for various purposes; and the visitor will be able to judge of the comparative merits and adaptability, not only of serpentine marble, alabaster, spar, granite, and porphyry, but of the different quality, appearance, and finish of the various kinds of each. There are samples of the finest kinds of marble from Derbyshire, Devonshire, many parts of Ireland; and within the court there are also specimens of foreign marbles manufactured in England, or by English artists. The granites are from Cornwall, of several localities, and presenting many varieties of colour, from the silver grey, so much admired for large work, to the richer colours—some of them very rare—used in ornaments of moderate size. The beautiful flesh-coloured varieties from Aberdeen will be found exceedingly remarkable for the perfect polish they take, and the gigantic size of the objects constructed of them. It is difficult to say more concerning these strikingly beautiful objects, without mentioning particular exhibitors, which it is not our intention to do in this sketch; but it may safely be said that all the principal manufacturers who exhibit in this class have gone to great expense, and taken every care to present themselves before the public in the best light. We are sure that to them the Exhibition must prove a great benefit, as it will be apparent, both from the material and style, that little is wanted to enable England to bring into the market the finest and most ornamental marbles and granites, and, at the same time, execute works in these substances of which no country and no artist need be ashamed.

The manufactures in stone, exhibited in Class 27, are not numerous; but they are very interesting and satisfactory. They consist of an exquisite font, in the centre of the Mineral Court, executed in Caen stone; a monument and niche, on the north wall of the court; and a vase and chimney-piece, in the avenue leading to the Refreshment Court. All are good, both as specimens of stone and workmanship, and have pretensions also to great artistic merit in design. We must refer to them again, but would direct the attention of the visitor to them as well worthy of notice.

The collection of works in imitation of marble and stone is exceedingly interesting, and includes works in common scagliola; in composition of new kinds, cast and afterwards polished; in stucco, both ordinary and of the kind called Keene's and Parian; in enamel on slate, of which the variety is very considerable, and the effect most admirable, and also in painting on wood. Many of these objects will be found worthy of very close attention, and exhibit much taste as well as good execution. They are chiefly grouped together, and can be conveniently compared and examined.

Next in order to the imitations of marble, we may mention the imitation stones, of which there are some examples. These are of three kinds: those known as terra cotta, and imitating Bath or Caen stone, of which there is a good specimen in a pinnacle, in the middle of the court; those made of Portland cement, and of grey colour, of which some garden figures are exhibited; and those of stone having silica base, and therefore much less liable to injury from exposure. Many of these materials are worked into vases exhibiting various degrees of excellence in form and material. Among the specimens of cement will be seen also some interesting modes of proving the strength of the material.

The collection of pottery and earthenware in this Class includes a considerable and interesting group of bricks and tiles, several gigantic retorts, and pipes and other objects both of interest and usefulness. The beautiful and highly ornamented tiles exhibited in the central avenue, are too remarkable to be passed by without notice. Nothing has been attempted of this kind that can at all approach this manufacture; and the floors and pavements made of compressed clay will attract general attention and admiration.

Among the miscellaneous articles in this class may be mentioned, as interesting from the material, a large garden-seat, exhibited by his Royal Highness Prince Albert, and made of cannal coal, of which a block, a large wine cooler, and a copy of the monument to the Earl of Durham, in the same material, accompanies the chair. There is also a model house of much interest, exhibited by the Society for the Improvement of Dwellings for the Poor, and made of a peculiar kind of hollow brick that is perfectly fireproof and not very costly. Other small models of houses and other constructions will be found illustrating special building contrivances.

TEXTILE FABRICS.

The importance of the Exhibition in this department cannot possibly be over estimated, since upon the position of the various branches of trade connected therewith, so much of our national prosperity depends, and the display now made cannot fail to do us immense service. For even supposing that our products do not bear the comparison with foreign productions to which they will be subjected, and that the assumed inferiority of British manufactures as regards the higher qualities of design prove true, our manufacturers will receive a stimulus which cannot fail to be beneficial; whilst our artisans will have placed before them examples of excellence, to the attainment of which in their own productions their spirit, talent, and energy will certainly prompt them to aim. But if, on the other hand, it should be seen that the products of our looms have been much underrated, and that, to serve the purpose of the dealer, it was more convenient for him to misinform his customer as to the real producer of the articles which he desired to sell; that, taking advantage of an existing prejudice against the products of his own country as not being of sufficient excellence to warrant his patronage, the seller led the buyer to believe that he was purchasing the silks of Lyons, the laces of Brussels or Valenciennes, the cambrics of Switzerland, or the embroideries of Paris, when, in fact, the silks of Spitalfields or of Manchester, the laces of Limerick or of Nottingham, or the cambrics and embroideries of the north of Ireland were really and truly the objects of their barter—then shall we, as a people, gain still more largely, and receive encouragement thereby to go on for the achievement of greater excellence; and, whilst honourably acknowledging the merits of our rivals, exert ourselves to emulate them, even in those departments of industry, and they are many, to which our attention has not been so immediately directed, whilst maintaining our position in those to which our skill and industry had been turned, and with a greater success, too, than we had anticipated.

In comparing the examples of the skill of the various countries of the world whose products are here assembled, it shall be our endeavour to draw instruction for the future; and, whilst candidly acknowledging the merits of our foreign brethren, whenever they are really manifested, we shall as fearlessly claim for ourselves the credit due to us as a people, for those manifestations of talent and industry in our own countrymen to which their works may appear to entitle them.

Taking the cotton manufacture as the first point in our glance at the textile productions, inasmuch as it may be said to be the basis from which the present manufacturing system of this country has sprung, and in which, through the inventions and improvements in machinery, we have been enabled so long to take the lead, some little disappointment may probably be expressed at the comparatively small extent to which a trade which employs so large a proportion of our population is illustrated: but when it is remembered that the products of this manufacture are not of that varied character to admit of any great or extensive display, that one or two specimens of each kind of production is amply sufficient to show its nature, it is rather a subject for congratulation than otherwise, that a larger display of examples in this department has not been made; since, had all, or even a tithe of our cotton manufacturers, exhibited specimens of their products, the display would have been wearisome and useless, and whole acres of different qualities of calico are not precisely the most desirable objects to inspect, however useful we may acknowledge them to be. The visitor, however, will find in the display before him very much to interest and instrust him. Thousands will have before them for the first time the leading features of a manufacture which it is no exaggeration to say, has worked, or rather been the agent for working so mighty a change, not only in the industrial position of this country, but of the whole world; and a little reflection will show that there is much more involved in cotton yarn, in warp, weft, and calico, than is generally supposed. With a material so perfectly exotic as cotton certainly is, even more so than silk, since with care this latter material can be grown with success in England, we find that our skill and industry enables us to bring it across the broad Atlantic, and after putting it through the various processes so admirably illustrated in the display made by Mr. Bazley, take it back to the precise spot whence it came, spun, woven, printed, and dyed, fit for the clothing of the worker employed in raising more of the raw material, to be again wrought by the same process, or with the addition of art equally fitted for the adornment of the fair helpmate of that worker, either as a delicate muslin fabric, or as an ornamental adjunct in elaborate and ingeniously-constructed lace.

There are few greater triumphs over the peculiarities of material than that which the present position of the science of cotton-spinning displays. From the moment the soft, down-like substance leaves the pod of the *Gossypium*, in which it has been developed, until the moment it is fit for the adornment of beauty as an ornament, or for the necessary clothing of mankind as an object of utility, it is the subject of skill and attention the most continuous and unremitting, whether the spinning be effected by the primitive workers of India, or the iron and steam-driven spindles of Lancashire. The triumph of this process, as regards delicacy and continuity, is now in this Exhibition—a wonderful example of the results of machinery, and the unerring certainty of its action, and, in its way, as great a triumph of skill as the Crystal Palace itself; since the one is an example of the unparalleled rapidity and certainty with which the largest edifice in existence has been erected by mechanical means and appliances, whilst the other is a proof of the delicate operation of a kindred power in producing a work so fine, that it is destroyed in the handling; and yet, so perfect is the operation, it is thrown off undamaged by the instruments of man's own construction. This curiosity of manufacture is exhibited by Messrs. Thos. Houldsworth and Co., of Manchester, and is the result of the energy and enterprise of Henry Houldsworth, Esq., of that firm. In the contribution of this house we find specimens of cotton yarn ranging from No. 100 to No. 700 in single yarn, and No. 100 to 670 in double yarn, or lace thread. These figures express the number of hanks to a single pound weight, each hank being 840 English yards: and the last-named number of 700 in single, and 670 in double yarn, is the triumph of cotton spinning for all practical purposes; since we find that a pound weight of cotton is elongated, in the first instance, to a length of 338 miles, and in the other, to a doubled thread 324 miles, at a cost of £28 as the price of a single pound weight. The most remarkable example, however, is the specimen shown as No. 900, both of yarn and thread, as a curiosity, by which a single pound of cotton is extended to 430 miles. This is useless for all manufacturing purposes, being too fine to be serviceable, or even capable of being handled. Still it is all it professes to be. The fineness of the cotton yarn used for lace-making has always been a great desideratum, and this firm has had a world-wide reputation for spinning the finest numbers. So late as 1840, 350 was the finest yarn attempted. In 1841, Messrs. Houldsworth spun 450, which was considered as the limit, until the Great Exhibition stimulated a further trial, and the result is now before the public, as palpable a fact as the Building in which it is exhibited.

The illustrations of the process of the cotton manufacture exhibited by Mr. Dunn, of Manchester, will prove of great interest to thousands; and the above details are given here for the purpose of calling attention to the importance of this branch of trade, since upon it is based very much of the elegance and beauty of those fabrics which we shall be hereafter called upon to examine. The muslin goods exhibited by Messrs. Crocker, of Friday-street, and those exhibited by Messrs. S. Mair, Sons, and Co., owe their existence to the skill of the cotton-spinner in preparing the yarn. The sewing cottons from Meltham Mills, Huddersfield, the contribution of Messrs. Jonas Brooks and Brothers, as also the specimens of similar articles from Derby and Nottingham, are equally dependent upon the perfection of process to which our manufacturers have arrived; and every seamstress and industrious housewife knows the importance of good cotton thread for the purposes of the needle; and here are displayed the best in all probability ever produced. The quiltings of Manchester and Bolton, the sewed muslins of Glasgow and Belfast, illustrate another form in which this material comes before us. Even the coarse and substantial ginghams of Cork, or the checks of Carlisle, serve to prove its universal importance.

Messrs. Spencer, of Manchester, as also Mr. Jabez Johnson, of the same place, exhibit specimens of quiltings of a very high character; and the Bolton contributions are worthy of its reputation. The Glasgow counters are well stored with goods of a costly and elegant character, to which special attention must be paid at a future time. Nor will the contribution of the King of Dahomey, consigned to Messrs. King, of Bristol, and exhibited by them, be without interest, as examples of the native manufacture of central Africa. In short, though not possessing to the general visitor all those attractions of form and colour to be found in other departments of textile manufacture, the illustrations of our cotton trade will be viewed with interest by every thoughful visitor.

Crossing the central avenue to the south side, we find the printed and dyed fabrics (Class 18) arranged in a tasteful and attractive form. Here, again, we see one of the elements of national prosperity, the entire development of the last sixty years; and could the first of the Peels see the growth of the results of that operation which enabled him to print the figure of a parsley leaf upon calico as an improvement upon the primitive spot, he would doubt the evidences of his senses, and that ingenious precursor of the calendering machine, the dame's ironing-board in the old farm kitchen, appear but an unworthy instrument for the finishing of such dainty goods as those here so profusly displayed. Art, science, and the highest mechanical skill have been here combined; and certainly there is every probability that our calico and silkprinters will stand the trial to which they have been put by the comparison which arises between their works and those of France and Switzerland. It is too early, however, to say much on this head; it is sufficient for our present purpose to declare that the visitor will find here a variety of excellent examples, which it will not be a very easy matter to surpass. London, Manchester, and Glasgow are each duly represented. Messrs. Liddiard's display, in conjunction with their provincial firm, Messrs. Hargraves Brothers and Co., of Manchester, fully justifies the honourable position which this house has maintained for nearly a century. Our fair readers will find examples of printed muslin, barège, and silk dresses of the highest excellence, the colours being at once brilliant and harmonious. A new mineral colour, which is calculated to stand the action of light, will ere long promote a change in the decoration of muslin window curtains; and the patent dahlia colour, by which a brilliant tone is obtained in cotton and cotton mixtures, is an improvement of great importance, of which this house and Messrs. Inglis and Wakefield have the exclusive use. The charming chintzes for dresses, and the butterfly patterns, will require special notice in due course. Messrs. Baker, Tucker, and Co., and D. Evans and Co., exhibit magnificent examples of bandanna printing, the colourings of which are of the highest character. Messrs. Salis, Schwabe, and Co., of Manchester, as also Messrs. Thomas Hoyle and Sons, Dalglish, Falconer, and Co., and Edmund Potter and Co., are all worthily represented. The display here made is a most interesting one; and the varieties of "style" in each compartment becomes a running commentary on the fickleness of fashion, and the incessant labour and innumerable experiments which the manufacturer is constantly compelled to make, in order to keep the market and meet the whims of his customers. The Glasgow printers, though few, are large contributors, and their efforts, in common with those above mentioned, shall have due attention. A novel mode of printing and embossing table-covers is exhibited by Messrs. Yates and Taylor, of London; and Messrs. Swainson and Denny's artistic furniture chintzes, together with Mr. R. Walford's bandannas, form an attractive group at the back of the court devoted to these fabrics. A panorama of calico printing is placed in this class, as a fitting illustration of the progress of this important trade, and is worthy of special attention. It has been constructed at an immense expenditure of time and labour, by Mr. M'Callum, one of the masters of the Manchester School of Design. The arrangement appears to be a very judicious one, but of that it will take time and leisure to judge. The external effect is good; and the views of "ancient and modern" Manchester are well introduced, and of considerable artistic merit. The designs applicable to the purposes of printing, &c., are placed, for want of room in this locality, on the west wall in the machinery court. There are a few of considerable merit, and those by Mr. John Smith, of Altrincham, near Manchester, and Mr. Carter, of Bexley Heath, are worthy of close examination. Of this group more will be said at the proper time.

The flax and linen manufacturers occupy the eastern end of the court devoted to the examples of printed and linen fabrics. The Belfast manufacturers show examples of the staple trades of the north of Ireland, and with great success, many of the specimens of damask table linen being of first-rate character alike in design as in execution; and whilst in many instances the artistic part is susceptible of a large amount of improvement, there is much upon which any one desirous to see a manufacture so peculiarly adapted to the climate and the genius of the Irish people in a flourishing condition, will congratulate himself. The Coulsons, William and James, though separate and rival firms, maintain the ancestral character of their name as linen damask manufacturers; and without instituting any comparison between the specimens of the two houses, we may speak of both as deserving of high commendation. Michael Andrews, of the Royal Ardoyne Manufactory, without showing so extensively as could be desired, justifies and keeps his position, the design and execution of the examples he exhibits being of a high character. Mr. John Henning, of Waringstown, and Messrs. Richardson, Sons, and Owdin, are large exhibitors of a series of highly creditable works; and in plain linens and cambrics, Messrs. Sadler, Fenton, and Co., of Belfast, James Malcolm, of Lurgan, and others, show what can be done by Irish skill and industry, when properly applied and directed.

The Dunfermline exhibitors make a goodly display, and do credit to the reputation of their town as the seat of the Scottish linen trade. The examples shown by Mr. Beveridge are of a first-rate character; and Mr. Birrill's damasks are worthy of every commendation. In short, both the Scotch and Irish manufacturers of this beautiful and useful material have done honour to their ancient reputation; and there can be no doubt that the substantial and elegant character of these goods will do much for the future prosperity of their trade, when the mania for shams and cheapness has fairly died away, and we believe it to be fast waning.

The London exhibitors in this department may be said to be the capitalists through whose energy and enterprise the real manufacturers are kept at work, and, as such, their claims are great and undeniable. We may, however, except the firms of Messrs. Dewar, Sons, and Co., and Messrs. Crawford and Lindsay, as they are manufacturers as well as merchants; and the specimens they exhibit are of an excellent character.

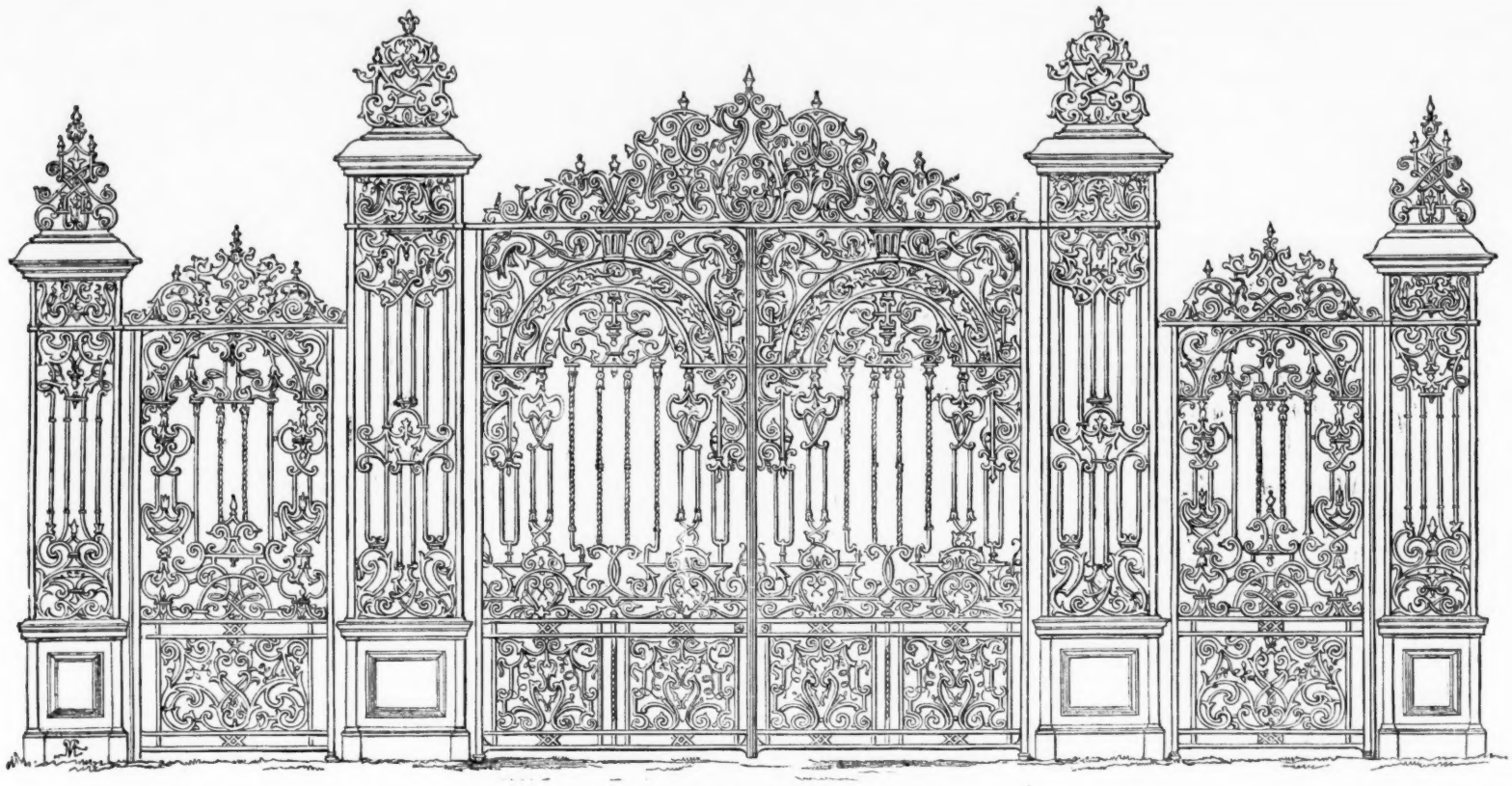
The Barnsley committee exhibit, through their honorary secretary, specimens of the staple manufacture of that town—huckabacks, table diapers, and toweling being in the ascendant. Messrs. Wilford, of Brompton, near Northallerton, have an excellent selection of linen, vestings, and trowsering, for the manufacture of which the French and Germans have generally had the credit, as this house "makes" largely in foreign goods! A more detailed notice of these examples may be expected at a future period.

The Dundee and Bridport committees illustrate the staples of their respective towns, and Arbroath sends examples of its sail-cloth, which, for want of space, are arranged on the north wall, and serve to illustrate the flax machinery.

Returning then to the Belfast display, before proceeding to the next court, in which the woollens and mixed fabrics are arranged, the beautiful examples of sewed and embroidered muslins, cambrics, and jaconets exhibited by Messrs. John Holden and Co., Belfast.

The importance to Ireland of this manufacture in a social point of view cannot be overrated, since it gives employment to many thousands of persons, and carries comfort and comparative independence into many a cottage which would otherwise be the scene of misery and degradation. The firm of Holden and Co. alone employs 8000 females in their own houses, and consequently expends large sums of money annually in wages. Established in 1832, its connexions are now extended from Belfast to the counties of Antrim, Armagh, Carlow, Cavan, Clare, Cork, Derry, Donegal, Down, Fermanagh, Galway, King's County, Louth, Mayo, Monaghan, Sligo, Tyrone, and Waterford, where branch houses are established for the distribution of the work amongst the peasantry; and the productions, at last fairly brought before the English public, in their true character as the productions of the daughters of Erin, will show to what an extent their talent in this direction has been cultivated. The Scotch have long adopted a similar system; but it is not generally known that the best sewed muslins are produced in Ireland for those Scottish houses, which have branch establishments at Belfast. We commend this display to the consideration of our fair countrywomen, in the hope that they will remember that no philanthropy is like that which affords employment to a people, and that eleemosynary help is more frequently an evil than a good.

Crossing from the side of the entrance to the staircase, at which the Belfast contributions terminate, the visitor commences his examination of the more costly fabrics of silks and poplins, the products of Dublin and other parts of Ireland. Messrs. William Fry and Co., of Dublin, occupy the counter opposite to Messrs. Holden, and the rich assortment of goods displayed here will astonish those who believed that Ireland does nothing for herself, and, as Paddy himself would say, less for England. The beautiful poplins, brocades, and tabinets of Mr.

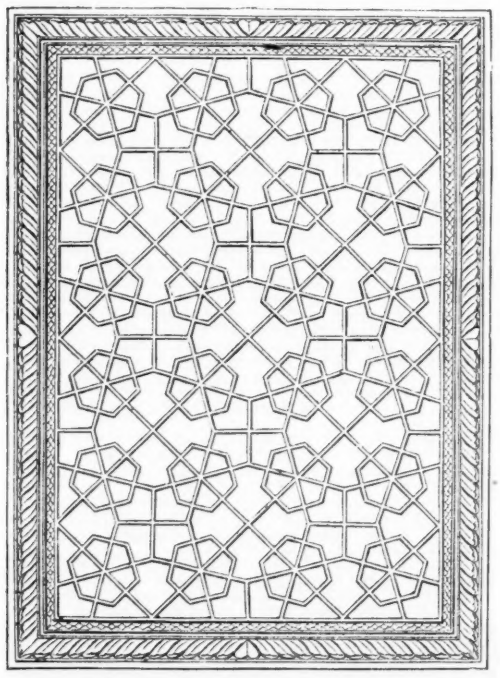


IRON GATES.—BY MESSRS. COTTAM AND HALLEN, OXFORD-STREET.

Reynolds, Messrs. Pim Brothers and Co., Mr. Jones, and Messrs. Atkinson and Co., all of Dublin, will astonish and delight every visitor; and the poplin loom erected by the last-named house, in which a weaver is actively engaged in working a richly brocaded poplin from a design executed appropriately enough by a pupil of the Dublin School of Design, will add largely to the interest of this part of the Exhibition. This machine is beautifully constructed, the framework being of mahogany, and the Jacquard mountings, &c., of suitable materials, producing, as a whole, a very elegant and tasteful effect.

At the back of the poplins, the Irish woollen goods are placed, and some excellent examples of the present state of the woollen manufactures of Ireland are to be found here, Mr. Richard Allen, of Dublin, and Messrs. Willans being the principal exhibitors. At the back will be found the examples of Mrs. Veevers's fabrics, manufactured from the fibre of nettles; as also various specimens made from the fibre of flowers. This lady resides at Mohill, county of Leitrim, and has paid much attention to the production of articles from the fibre of common plants not hitherto used for such purposes.

Before quitting this locality, it may be well to impress upon the visitor the distinct character of the arrangements for the display, almost in a national sense, of Irish products, inasmuch as they are, as far as the classification would allow, brought nearly all together. Hogan's celebrated statue of "Hibernia," the property of Lord Cloncurry, was to have been placed in front of the loom; but that distinguished patriot, perhaps wisely, desired to have a guarantee for its safe return to his possession. This guarantee



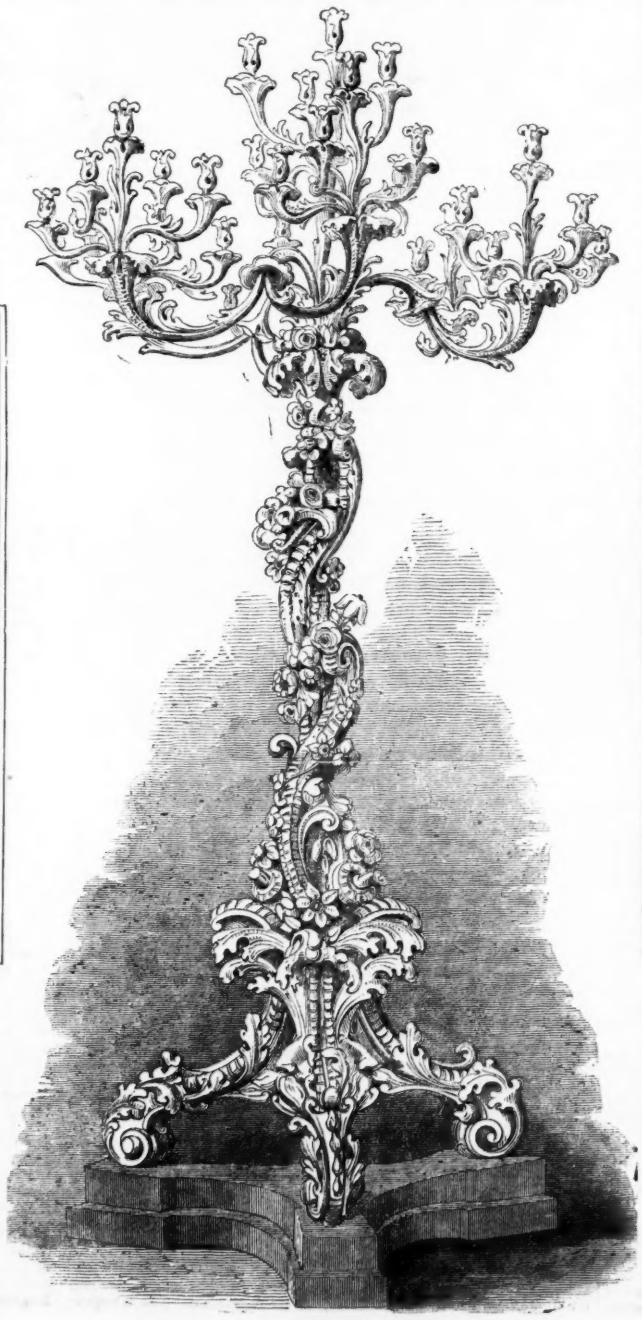
PERFORATED STONE.—EAST INDIA COMPANY.

could not be given; and so the symbol of Irish nationality, which would have completed the group, is wanting. Mr. Panormo, of Dublin, having sent his statue of "Caractacus," this work has been placed there, and stands as a fitting emblem of Irish industry, in the person of the chained captive. Let us hope, however, that the Roman soldier, whom we here see unloosing the bonds of the noble Briton, is also the symbol of this display, and that, ere long, free and unfettered, the industry, the talent, and the energy of Ireland will be fairly developed; and that, quitting the vague and unprofitable field of mere political activity, the social and industrial elements so long dormant within her will arise and work that change so much needed in the position of her people, but which it is in vain to look for from any other source than that of the development of those national resources possessed in such abundance, but so long neglected for the chimera of mere political change.

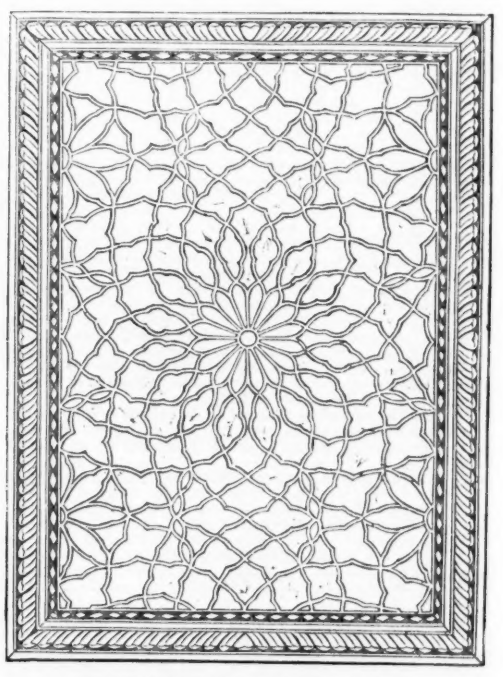
The great feature of the group of mixed fabrics and woollens, as arranged in the locality under consideration, is the display of that important seat of industry, the West Riding of Yorkshire. Owing to the desire of the respective committees of the various towns in this district, that the manufactured articles to be exhibited by them should not be divided, and as there was a strict analogy in the whole of them, it was wisely determined that the arrangement of Classes 12 and 15 should be made subservient to the wishes of so large a body of exhibitors. Accordingly, there will be found in this large group specimens of all those different branches of manufacture with which the West Riding supplies our own wants and those of our foreign customers. It is true that there are certain classes of goods peculiar to each of the great towns of the West Riding: thus, Leeds is the exponent of woollen cloths; Bradford, of mixed goods adapted to ladies' dresses; Halifax, of worsted damasks, and worsted and silk for furniture; and Huddersfield, of shawls and the lighter materials of dress each, however, partaking more or less of the character of the others in addition to its own speciality. The arrangement of the goods, though somewhat crowded, is, on the whole, very excellent. The fittings of each town are as distinct as it is well possible for them to be, and certainly their substantiality is most unexceptionable, since they appear as enduring as the Building itself. The arrangements in front, next to the central avenue, are an exception to those of the whole Exhibition; and whilst they are well adapted to the display of the specimens arranged therein, the enormous glass cases, with polished mahogany frame-work, do much to interrupt the view along the centre. In a display like this it would be invidious to select any particular exhibitors, whilst simply giving a glance at the leading features of the whole; in the regular course we shall pay our respects to each town and its individual exhibitors, and meantime commend the display to the attention and consideration of the visitor, who will indeed be fastidious if he does not find something to please him.

The West of England, also, has its group of woollens, and its reputation for the production of the highest class of cloths is well sustained; and, though not so attractive in appearance, being wanting in those fascinations of brilliant colours which characterise the articles around, the contributions will repay a close and critical examination.

The London exhibitors in this class appear simply in the character of merchants, or as the proprietors of certain kinds of cloth made for their exclusive sale, a fiction of commerce which has



CANDELABRUM.—BY JOHN WEBB, OLD BOND-STREET.

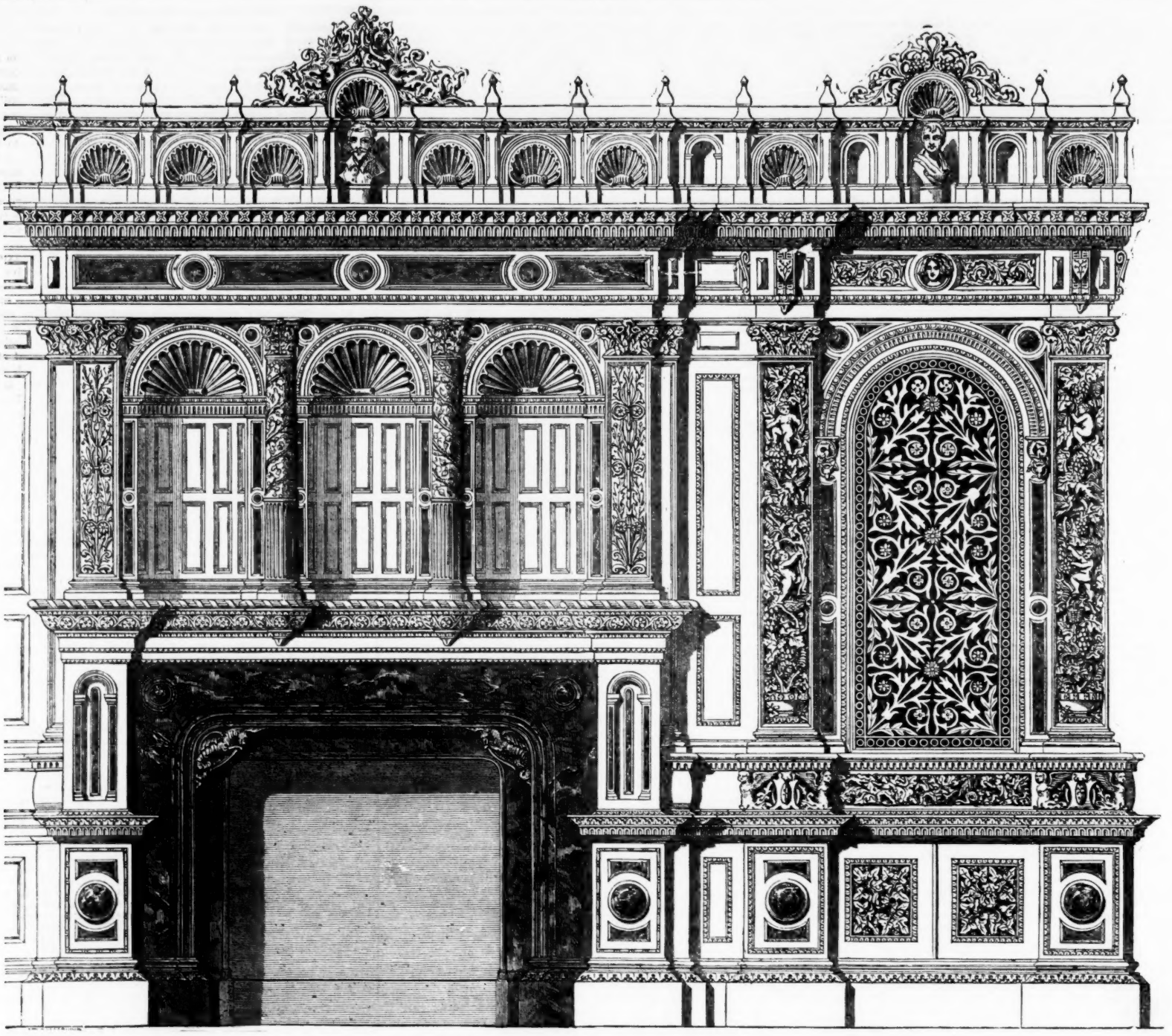


PERFORATED STONE.—EAST INDIA COMPANY.

its advantages and its disadvantages, bringing the capitalist and salesman to the aid of the manufacturer in one sense, but too frequently taking the reputation of the latter as a portion of the bargain.

The manufacturers of Scottish woollens, shawls, tartans, and tweeds have combined to make a very great display. It is to be regretted, however, that the necessities of the case were such as to compel the division of these contributions. Thus, a portion are exhibited here with the other goods of their class; another portion on the north wall, extending the whole length of the court in which the woollen machinery is placed; and a third but small portion is placed in the transept gallery. The Galashiels tartans and shawls are kept together in their proper place, as also certain divisions of the Glasgow goods. The illustration of Scottish industry thus given is a very satisfactory one; and, taken as a whole, our friends of the north have done themselves credit in every sense of the word.

The remainder of this court is filled with specimens of the coarser kind of woollens. Some admirable specimens of horse-clothing, exhibited by Mr. Bliss, of Chipping Norton, and a large contribution of blankets from the Messrs. Early, of Witney, illu-



SIDE OF A LIBRARY.—BY MESSRS. HOLLAND AND SON.

trate the ancient reputation of Oxfordshire for this description of goods. Kendal, too, makes a good display in railway wrappers, Messrs. J. Ireland and Co. occupying the whole wall at the end of the court with their ponderous examples of the looms of Westmoreland.

Before quitting this department, we have no hesitation in saying, that, as a whole, the exposition of British industry and talent here made is of the best and most practical character; and, however much hypercritism may carp at exceptional examples, there is a large amount of excellence of which every man of candid judgment will feel proud, and every well-wisher of our commerce and the future progress of our industry and artistic skill, as applied to manufactures, be delighted to see.

COLONIAL SECTION.

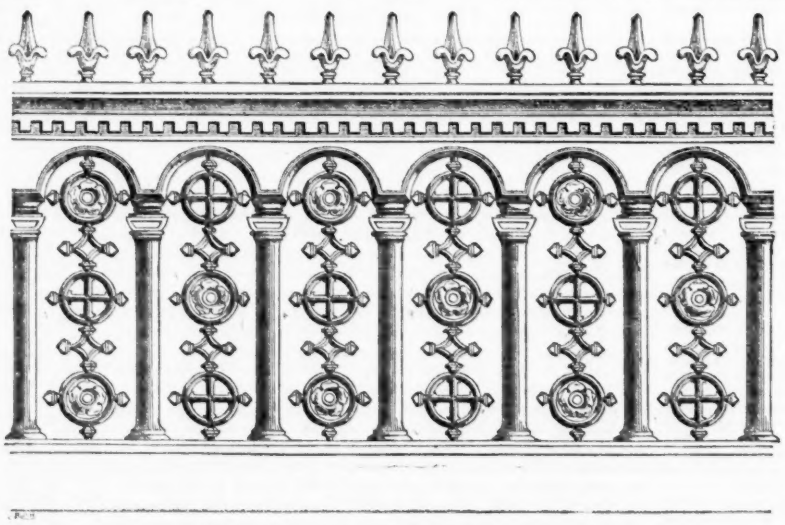
As we turn down the western arm of the grand avenue, on either hand, we pass the display of East Indian productions and manufactures, which the Company have been enabled, by the aid of their numerous and intelligent officers, to gather together for our instruction and amusement within the very short period available for that purpose. The examination of this valuable museum we reserve until, arranged in order, we are enabled to do it full justice.

We pass on to the succeeding sections, containing the produce of Ceylon, Canada, and our Australian possessions.

THE CEYLON CONTRIBUTION.

Few if any of our Eastern possessions will be fairly represented at the Great Exhibition, not even the East Indies, where all the power of the Company has been brought to bear, chiefly owing to the shortness of time permitted for the collection of objects. Great complaints have been made in the colonies that, they received no official notice of the Exhibition for two or three months after it had been mentioned in the papers, and that therefore no persons felt inclined to act. Added to these delays were the indifference of the native population in Ceylon, and elsewhere, and the natural obstacles of climate, difficulty of transport, &c., peculiar to those tropical regions.

As regards Ceylon, there is scarcely anything exhibited in thet art for which its inhabitants have been justly celebrated—carving in wood and ivory. It was not until March, 1850, that a local committee was formed; and to ensure the arrival of the goods by the prescribed time, the 1st of March, they had to be shipped by the end of September, thus leaving but six clear months for articles which required at least a year. It is quite impossible to persuade a Cingalese carver to work faster than is his custom; he will not depart from long-established usage. The ivory-work of Ceylon is scarcely known in Europe; and it is deeply to be regretted that no worthy specimen of this species of carving has arrived. The inlaid furniture of ebony, calamander, &c.,



RAILING FOR A TOMB.—COALBROOK DALE.—BY COLE.

is perhaps unequalled in any part of the world, yet there are but two specimens come to hand.

The native jewellery is worked in extremely elegant patterns: of this specimens are looked for by the next Overland Mail, consisting of hair-pins, combs, necklaces, collars, bangles, &c., set in Ceylon stones.

Ceylon is prolific in fibrous materials, many of which are well adapted as substitutes for flax and hemp. Some of these are shewn in the raw and manufactured state.

The earthenware of the Cingalese is more curious than valuable; the art of pottery with them being, in all probability, not more advanced than in the time when Plotemy and the Arabian navigators first visited

The utmost Indian isle, Taprobane.

The same remark will apply with equal truth to their agricultural and manufacturing implements. The Cingalese women may still be seen grinding their corn, "two at one stone," as described in Scripture.

The bows and arrows employed by the wild Veddahs of the Ouvah and Bintenne districts, in the hunting of deer and buffaloes, are remarkable for little beyond their simplicity and diminutiveness.

The coffee, the cinnamon, and the cocoa-nut oil of Ceylon are articles well known in the commercial world: they are equal, if not superior, to the production of any other country. There are also to be found models of the buildings, machinery, and implements employed in coffee plantations in Ceylon. Models of the Cingalese fishing-canoes, which are of very singular and beautiful construction, unlike those of any other country, are displayed with their nets and gear on a proper scale.

First in value and importance are specimens of *cinnamon*, a spice highly prized from long antiquity, and peculiar to the "utmost Indian isle." Java has in vain attempted to produce cinnamon that should rival the fine spice of Ceylon, and the rough coarse bark grown on the Malabar coast cannot be compared with it. The Portuguese and Dutch preserved a strict monopoly of the cultivation and trade in this article; and it was not until the year 1833 that the British Government threw open the privilege of dealing in it to the public. Since that period, the preserved Spice Gardens have been sold, and are now cultivated by private parties. It is sorted into three qualities, and is just now worth an average price of 2s. the pound in this market.

Cinnamon is the bark of the *Laurus cinnamomi*, freed from its outer cuticle, and removed from the sticks in long narrow slips: these pieces of bark are rolled into *pipes* or *quills*, in layers of three or four, and are dried gradually first in the shade, and then in the sun.

A cinnamon plantation of 800 acres will produce annually 400 bales of spice, of 100 lb. each. The present consumption of cinnamon of Ceylon growth is about 3500 bales per annum, of which not more than the 500 are used in this country; the remainder are taken chiefly by France, Spain, and South America.

Of far more recen

CURTAIN CORNICE OF PAPIER MACHE.—BY JACKSON, RATHBONE-PLACE.

date, though equally important as an article of commerce, is coffee. Twenty years ago, the *Coffea arabica* was scarcely known in Ceylon. It was not until the years 1832 and 1834 that a very few Europeans commenced the cultivation of the coffee-bush. There are now 300 estates, comprising 50,000 acres of land, all under coffee; the shipments amounting to 350,000 cwt. annually. This article is all grown inland, at various altitudes, the best being from the highest estates.

Coir fibre and rope is made from the outer husk of the cocoa-nut: the kernel of the nut yielding a most useful oil by pressure, which is exported to Europe in large quantities.

Paddy is rice with its natural skin upon it, and in this state is given to all sorts of cattle and poultry. The rice of Ceylon is not nearly so fine as that brought to this country from Carolina and Bengal, but it has very nutritious qualities, and the Cingalese and many Europeans prefer it to any other description.

The woods of Ceylon are scarcely inferior to those of any other country, and exist in great variety. There are upwards of four hundred kinds, of which one half are employed for a variety of purposes, the remainder being useless. The ornamental woods are ebony, calamander, satin, cocoa-nut, peyimbeya, teak, tamarind, jack, palmyra, &c. The most abundant of the woods used for house and ship-building, of which specimens have been sent, are halmanilla, teak, morotto, dawete, mangoe, keena, hall, and horra.

Besides *coir*, there are several fibrous substances in Ceylon, capable of being turned to useful purposes. Amongst those forwarded to the Exhibition are fibres, both in their natural and prepared state, from the pine-apple, hibiscus, plantain, *Sansevèira zelonica*, and Adam's needle.

There are a number of gums and resins unknown in this country, most of which are employed medicinally by the native practitioners. Besides these, a collection of medicinal plants, roots, and seeds, in a dried state, will be found. Many of them possess valuable properties, well known in Ceylon, in the removal of fever, dysentery, liver, and cholera. The Dutch and Cingalese doctors seldom have recourse to any but vegetable medicines, and these are often found to succeed where European remedies have failed. The collection was forwarded by Mr. T. Piries, of Kandy.

Under the head of Machinery, Implements, &c., we find three models of the various works and their fittings, as employed on coffee estates. First, there is the *pulping-house*, with its *pulpers*, *cisterns*, &c., for removing the outer red husk of the coffee berry, and afterwards washing the mucilage from it. Next is the stove, and moveable trays running on wheeled platforms, whereon the washed coffee is exposed to the sun in its inner covering of parchment-skin. When thoroughly dried to a flinty hardness, the berries are removed to the adjoining building, the pecling-house, where a pair of copper-covered wheels are revolving in a circular trough, under which the parchment rapidly breaks, and becomes detached from the coffee beans.

Near these will be observed another model of a stove for curing coffee. This is of peculiar construction, and fitted up according to a process which has been patented by the ingenious inventor, Mr. Clershew, of the Rathongodde estate. It is formed on the principle of curing the coffee whilst in the *parchment* by means of a current of hot air, to be used during weather when out-of-door drying would be impossible.

The models of Cingalese palanquins will be regarded rather as curiosities than as specimens of fine work. Too much praise, however, can scarcely be accorded to the construction of the three Cingalese boats, which are unique, not only as specimens of handicraft, but as models of very singular and beautiful vessels. The long sailing canoe, to be fully admired, should be seen in full sail when going at a speed of fourteen miles the hour, which it frequently does. The flat-bottomed fishing dhoney, with its nets and accoutrements, is a very pretty thing. The large dhoney is such as is employed in the coasting trade of Ceylon, for the transport of rice, tobacco, salt, betel-nuts, &c.: they vary in size from 30 to 200 tons; and not the least singular feature about them is, that not one iron nail is used in their build, nothing but wooden pegs and coir string holding the planks and beams together.

The plough, harrow, and rake of the Cingalese agriculturist attest the little improvement effected in their operations, which have, no doubt remained unchanged during the last 1800 years.

Amongst manufactured articles, the most attractive is, undoubtedly, a table and stand of ebony, richly carved, and beautifully inlaid with the many-tinted woods of Ceylon. There are also a desk composed of porcupine quills, a carved ebony box, an ivory stand in imitation of a cocoa-nut blossom, and some other trifles. These form but a tithe of what might have been exhibited, had time permitted.

There are some rather grotesque specimens of native pottery, the only one worthy of notice being a painted tea-pot used by the King of Kandy.

There are a number of specimens of cordage, &c., woven from the fibres previously named; also a pretty Kandian mat, and several ornaments displayed by the Kandian Kings on state occasions, made from fibres, and dyed with indigenous roots.

The Veddah bows and arrows are such as are actually employed in the present day by a wild and almost unknown race of Cingalese, in the pursuit of deer, buffaloes, and wild boars. This singular cast of aborigines dwell entirely amongst rocks, or perched in trees like monkeys, living chiefly on roots, seed, and a little deer or buffalo flesh.

The manufactured oils of Ceylon are numerous, though most of them are at present unknown in this country. They may be divided into medicinal and commercial. Many of the former are said to possess valuable properties, yet, with the exception of the castor oil, they are not known to any but native practitioners. These were forwarded by Mr. Piries, of Kandy. Of the oils of commerce, the cocoa-nut, cinnamon, lemon-grass, citronella, and kekuna are tolerably well known, the first being highly useful for burning in lamps; the second is chiefly employed in medicine and confectionary.

Arrack is a spirit distilled from the fermented juice of the cocoa-nut tree, called *toddy*, and has long been known in England as forming the chief ingredient of Vauxhall punch. The sample sent is very curious, having been upwards of thirty years in bottle, and coming originally from the cellar of the last Dutch Governor of Ceylon.

CONTRIBUTIONS FROM CANADA.

By crossing the breadth of the avenue we have travelled from Ceylon to Canada, and are within sight of the Cape of Good Hope, Van Diemen's Land, and the produce of the three Australian colonies of New South Wales, Port Philip (or Victoria), and South Australia.

Canada makes the best display, as was to be expected from the energetic character of the people, the means they had of obtaining early intelligence, of conveying their goods to this country, and obtaining the co-operation of the Governor, the Earl of Elgin, and their local authorities. The Canadians held a preliminary exhibition of native produce, and selected from that Exhibition the best, as specimens of raw produce and manufactures.

The most prominent object is a fire-engine from Montreal, which carried off the first prize at the Canadian Exhibition of Industry, and has been sent, by subscription among a few patriotic Canadians, to show what the mechanics of that fine colony can do. As a carriage, it is extremely handsome. The panels are adorned with paintings of Canadian scenery, views of a great fire at Montreal, the principal churches, banks, and other public buildings, and figures of an Indian in snow shoes in winter costume, of a fireman, &c., executed with a spirit and feeling of reality which raises them above the class of ordinary coach-painting. The body is of copper, from the rich copper mines on Lake Superior, lined with wood. The tool-box is of mahogany. The mechanical arrangements seem good, and the finish of both the wood and metal-work is most creditable to Canadian workmen. It is followed by a hose-box on two wheels, to carry 300 feet of hose, and weighs altogether 35 cwt. It will pump up water from a depth of 27 feet; and, according to the statement of the gentleman who manufactured it, will throw 170 feet high from 300 feet of hose. Fire-engines throughout both British and Republican America, are drawn by men, and not by horses. They are usually the property of young men associated into voluntary companies, who take great pride in adorning their respective engines. Hence the profusion of painting and other ornamental decoration.

Over the fire-engine is suspended a canoe of white birch, which presents no especial difference from canoes we have seen a hundred times, except its size; but this canoe was actually paddled 3000 miles of lake and river navigation, with a crew of twenty men, before being placed on board a steamer for England. It is the same description of canoe employed by the Hudson's Bay Company in their annual journies to the vast preserves of fur-bearing animals under their command. We should have been pleased if it had been accompanied by one of the *voyageurs*, whose gay costume and songs, and simple semi-savage manners, have been described in the book of Sir George Simpson, late Resident Governor of Hudson's Bay, or, as it is now officially named, Rupert's Land, and several North American travellers.

A piano, a large French bedstead, a set of tables and chairs, all elaborately carved out of Canadian black walnut, next come under our notice, as remarkable specimens of a wood as yet little known in this country. In colour, size, beauty of grain, and polish, it is equal, if not superior to the best specimens of French and Italian walnut. A slab, which forms part of the Canadian trophy in the central avenue, was cut from a tree which made 27,000 feet of available timber. The workmanship of this furniture, although very fair, offers nothing remarkable for praise or blame. We like the emblematic beavers carved round the edge of the table: we cannot approve of the same animals crawling like rats on the cross bars of the legs. Among the chairs are a set unpolished, and fashioned after some introduced into America by the earliest settlers. It is reported that her Majesty has condescended to accept them. One Canadian gentleman was under the impression that the originals had been imported from England in the sixteenth century, by Sebastian Cabot; but that is unlikely, because, although Cabot discovered Labrador, there is no evidence that he formed any settlement in Canada at all. The originals are probably of French origin, and not older than the time of Louis Quatorze.

Around the fire-engine are arranged a set of Canadian sleighs. The white one is a cutter for one horse; the next, an elegant long carriage of very graceful curves, is a tandem sleigh; the largest is for a pair or four horses, and is made after the fashion approved by the Military Tandem Club. With the sleighs, we must notice a set of harness hanging on the wall, the saddles covered with bells, and adorned with pendant plumes of blue horse-hair: white plumes of the same material are arranged to wave from brass spikes between the ears of the prancing horses. On a bright winter's day we can imagine no prettier sight than the whole turn-out, with its blood horses, ringing bells, fair ladies wrapped in furs, and dashing fur-wrapped driver, careering across the hard snow or the sounding ice of a frozen river.

Furs, skins, horns, and Indian curiosities fill up the interstices of the Canadian collection. The head and wide-spreading horns of a gigantic moose, or elk, may be compared with the European variety of the same species, from the Lithuanian forests, exhibited in the Russian section.

AUSTRALIAN CONTRIBUTIONS.

The colonies of Australia, although among the most important of our possessions as producers of raw materials required for our staple manufacturers, as large consumers of our manufactures, and as great fields for emigration, have nothing very new or very showy to exhibit. New South Wales, Port Philip, and South Australia all send barrels of fine wheat and flour, which are satisfactory as proving that the intending colonist may depend on cheap bread in those distant regions. Australian wool and tallow are to be seen in such quantities in the warehouses of London and Liverpool, that we need not dwell on those great and annually increasing sources of wealth. The timber, although much of it is good, especially from Van Diemen's Land, and some specimens very ornamental, is not likely to become an article of commerce with this country. The distance is too great to enable it to stand the competition of countries nearer at hand.

Van Diemen's Land, which probably grows the best wheat, supplies the other colonies and New Zealand with a considerable quantity of timber, has sent the jaws of the sperm whale—another source of colonial wealth— often hunted down from the shores of that island.

South Australia supplies specimens of the rich copper mine of Burra Burra, which restored the fortunes of that colony, and rendered it one of our most flourishing possessions, at a time when, under the ruinous results of an empirical system of land-jobbing and colonization, it had sunk into the lowest state of depression and stagnation: abandoned by men of enterprise or means, it was on the point of becoming a mere sheepwalk. It is a curious fact, that, although the copper exports of South Australia exceed a quarter of a million sterling per annum, no copper mine in that colony has paid a dividend except the Burra Burra, but that pays £1500 per cent.

On the walls of the South Australian section hang a set of clever water-colours, representing the country round this Aladdin's lamp of a copper mine, and various Australian scenes, bullocks in drays and stockmen riding after cattle. On the wall appropriated to New South Wales, is a beautiful view of Canden, where Macarthur first introduced the fine-wooled sheep, which has proved a living mine of wealth to the whole continent of Australia. Our colonial brethren, who know well how they are appreciated in the City, will excuse us from dwelling on sources of greatness which are more felt than seen: there is nothing picturesque in a sack of wheat, though the grain be "heavy and bright-coloured;" there is nothing interesting in a tin of preserved Australian beef, excellent though it be, unless to a hungry man; little variety of "tone or colour" in a fleece fine enough to make the fortune of a Yorkshire manufacturer; and, as for copper ore, the worst specimens are often the most sparkling. Bottles of Australian wine inform those who were before ignorant, that wine is as easily grown in that country as cider is here.

The remarks on the produce of Australia and Van Diemen's Land equally apply to New Zealand, which has many curiosities, but only produces profitably wool and flour. The mineral treasures of all these countries will be noticed in a regular review of all the geological portion of the Exhibition, by an eminent Professor.

The most prominent objects in the articles sent from the Cape are some bullocks' heads with monstrous horns; some hides, skins, and walking-sticks, and two great antelopes, very badly stuffed. Van Dieman's Land makes a gay display of fancy woods and 'possum skins.

THE HISTORY OF INDUSTRIAL EXHIBITIONS.

BY W. BLANCHARD JERROLD.

CHAPTER I.—INTRODUCTORY.

THE magnificent ovation which this country has paid to industry under the enlightened influence of the Prince Consort, will hereafter be referred to by historians, as a great and decisive epoch in the history of the working classes of the world. The skill that realises the dreams of science, that follows with unerring fingers the pencil of the artist, which multiplies for thousands of readers the writings of the best and greatest men, will henceforth claim its honourable place. The weaver at his loom will have his recognised position: the worker, who scatters the seed abroad upon the fecund bosom of the earth, will feel the honour of his calling. Industry, whether exercised to fell an oak or to create an act of Parliament, is equally meritorious. Each man in his appointed sphere. All men are not Shakspeares. Each has his specialty: honour to him who works it out, even though it be, as in Eulenstein's case, the performance of the jew's-harp. Honour to him who weaves the canvass, as to him who paints thereupon with the power of a master. There is honour in the conscientious exercise of the most limited power, as in the development of the most mighty conception; honour in grinding the paint, as in wielding the palette. Fame waits upon the doings of the great—waits the name of the artist and the writer across the world; but the obscure labours of the artisan are unknown, unregarded beyond the warehouse of his employer. It is a principle of human nature to venerate and deify power, whether expressed in the conduct of armies, the eloquence of the senate, the theories of the philosopher, the dreams of the poet, the realisations of the engineer, or the colours of the painter. The greater the power, the more devout the veneration; the higher the throne, the louder the hymn of praise. It is only now that we are beginning to wake from the old hero-worship—to notice the honest men who bend the knee to our idols. You have placed yonder hero at a great height. You bend the neck to him—you acknowledge him as your leader. He has greater power than your puny self. He can toy with the weapon you cannot raise from the dust; naturally, therefore, you place yourself under his protection. He is undoubtedly the stronger, but is he the better man? Euclid—a maze to you—is a child's page to him. Here you have proof of his power, in other words, of his genius; but of his moral power—his strength to endure—his patience under suffering—his faith in an intellectual capacity infinitely transcending his own—where are these great qualities? where is the moral power? Not there, near his throne, but very likely with that busy worker at his feet. Honour, therefore, to the moral power that works and suffers, while intellectual power soars aloft, and wields, often with a grim severity, the sabre, pen, and compasses. We are told* that "if we examine the moral character of weavers, we shall find them, from the earliest periods, distinguished by a propensity to scrutinise the received dogmas of the times, and generally foremost in the race of liberal opinions, zealous in supporting the promulgation of new doctrines, full of hostility to the encroachments of tyrannical power, disposed to fanaticism in religion, often of a gloomy and determined cast of character, and pervaded with the most entire devotion to the cause they espouse—a circumstance to which the peculiarity of their religious feelings mainly contributes. The doctrines of Luther were first sown, and first took root amongst the weavers and manufacturing population of Saxony, a soil the most genial for the reception of the new religion; and posterity is indebted to them for having received and sheltered that vigorous controversialist, and for having nourished and fanned the spark which afterwards blazed out far and wide, enlightened the European mind, and freed it from the chains of darkness and superstition. Amongst men less disposed to inquire and to question, and more inclined to bow to the dictates of authority, the nascent spark might have been extinguished. The weavers in England, also, were amongst the earliest supporters of the Reformation, and were cruelly persecuted by Bonner. As, in the commencement of the sixteenth century, they had been among the foremost to receive and adopt Luther's doctrines, so we find them, in the commencement of the seventeenth century, equally ready to receive those of Puritanism; and they encountered, perhaps in a slighter degree, persecutions from the English hierarchy similar to those which their predecessors had sustained from the Roman Catholics. Great numbers of woollen and worsted weavers were driven out of the country by the intolerant hand, and they also met with much severe treatment from Wrenn, Bishop of Norwich. Some of them fled to Holland, others to the new settlement in Massachusetts Bay. Glasgow, when the weavers were a corporate body in 1528, was early distinguished for its zeal against Popery; and, in the middle of the seventeenth century, was staunch in supporting the Covenant. The free spirit which animated the Huguenots of France, and the consequent disgust with which Louis the Fourteenth regarded them, was, in all probability, the cause of the revocation of the Edict of Nantes. This measure drove fifty thousand Huguenot families from France: they were chiefly weavers, and twenty thousand of them settled in Spitalfields, London, and gave a new impulse to the English silk manufacture."

Richard Guest's view of the weaver's mind is strengthened by their present social position. Ever ready to weigh public questions for themselves, prone to discussion, sensitive by blood, and inquisitive from habit, they are quick to master new ideas, ever prone to adopt innovations. In religion, as in political theory, they scorn controul, and are restless and impatient, while they imagine that they are unjustly dealt with. Very few of them belong to the Church of England, the great majority of them being Methodists. They are proud of their calling, and honour their brotherhood; and, as an industrial class, display, perhaps more than any other, those virtues which we are beginning to respect in the working-man as in the listless lord. The time is now fast approaching, when, at the hands of the country, they will receive befitting acknowledgment of their social value; when their moral qualities will claim that respect which has hitherto been exclusively lavished upon brilliant intellectual capacity, or virtue in velvet. Men are beginning, with Emerson, to respect a man who can do something well. Perseverance, as a quality, has not been hitherto sufficiently respected; yet it is the prominent characteristic of the English mind. The applause that follows a burst of genius has drowned the feeble approbation that would have crowned perseverance. "We touch and go, and sip the foam of many lives." The workman who realises is forgotten in the architect who conceives; yet there is a deep-seated morality in the fretful labour that knows no rest, but patiently, constantly strives. Let us follow the career of M'Intosh, the violin-maker, of Dovecotland, who died last year. M'Intosh was a Highlandman, who, having acquired the art of violin-making, went to Dublin to pursue his business. His skill and steadiness secured his success. Soon his annual receipts amounted to above £300, some of his instruments selling at the enormous sum of £10, £15, £20, and £30 each. He supplied Paganini with violin strings. At the height of his successful career, he tried to invent the "perpetual movement," which so many had failed in, left Dublin to get rid of his friends, and went to Dovecotland. In this locality he laboured at his idea for eleven years, five of which he spent in an attic, suffering frightful privations, but wedded to the end to his theory, and labouring alone, friendless, and without encouragement. There is a touching sentiment in this simple history. There must have been a moral stamina in the man who could so patiently suffer and persevere, that entitled him to take honourable rank among great natures. Let him stand side by side with the intellectual lights to which we bend the knee; let the great heart find its place near the great brain. We have mistaken the aim of national industrial exhibitions generally, but more particularly of the promoters of our Great Exhibition, if that aim be not to vindicate the worth of labour, as well as the grandeur of science and the influence of art, to acknowledge in the face of the world the hand that realises the dreams of science and the misty conceptions of the artist. The great aim is to wed industry irrevocably to the beautiful, to guide the weaver's hand by the rules of beauty. But let not the workman be quite forgotten at the marriage. He is, perhaps, the weaker vessel, yet without him the artist may dream, but cannot create. The union will—experience bears us out—bear good fruit abundantly.

The social effect of an alliance of art with commercial industry cannot be overrated. At the present time it is generally accepted that the popular cultivation of art tends to the refinement and enlightenment of a community. "It seems as if an unhandsome action before the portrait of a noble female's countenance would be impossible;"* and Leigh Hunt tells a pertinent story of a Catholic money-lender, who, when he was about to play a cheat upon an unfortunate customer, always drew a veil before the portrait of his favourite saint. The assertion that the presence of beauty, in whatever form presented, exercises an elevating influence even over the ignorant or depraved, has become a truism. Beauty refines and elevates its votaries and its priests; and Rembrandt's "Descent" has been as potent in inspiring thousands with religious sentiments as the pulpit eloquence of the most gifted divines. All steps which tend to diffuse art, tend undoubtedly and directly to raise the popular character; and it is difficult to fully estimate and comprehend the possible extent of good a cottager would derive from the introduction of household objects into his humble abode, moulded in forms of grace and beauty. While art elevates the moral man, literary education simply enlarges his sphere of knowledge, and strengthens his intellectual capacity. Art and literature, to do their full measure of good, should and must go hand in hand. The good effects arising from the national encouragement of art is now felt throughout every class of the French community. During the last fifty years, art has been generally nourished by the governments of France; and the institution of elementary schools of art in every town of the kingdom, has developed a national taste against which the world—even England—trembles to compete. This national taste is the result, first, of national industrial exhibitions; and, secondly, of the elementary art schools, to which allusion has been made. The schools of design which are now flourishing in England, and the beneficial influence of which is only now beginning to make itself felt, are merely illiberal imitations of the French national art schools. We say illiberal imitations, because our schools of design do not afford that free ingress and egress to all classes, without any payment whatever, which the French Government schools afford. But from the wonderful Hyde-Park Palace how many liberal ideas may we not hope to gather! Such a scheme as the Exhibition of the Industry of the World, originating with us, must inevitably lead us, at least, to do as much for the art-education of the general community as the poorer nations of Europe afford to their industrious classes.

CHAPTER II.

In treating of the effect of Industrial Exhibitions upon the manufactures and habits of a people, it is necessary first to understand thoroughly and clearly the conditions, as regards art and skill, in which they were when they first adopted the scheme of gathering their collective skill and taste under one great common roof. It is clear, in the first place, that France is in every way an exceptional instance. She excelled in taste and manufacturing skill at a very remote date. Even in the thirteenth century, her artizans were renowned in other countries for the superior skill and taste with which they manufactured goldsmith's work and stained glass, and for the beauty of their illuminated manuscripts. These excellences are matters of notorious history. We have

* Richard Guest's compendious "History of the Cotton Manufacture."

* Hazlitt.

only to turn to the career of Jacques Cœur (under whose name a great agency is to convey the Parisian manufactures to the Great Exhibition), the great capitalist and merchant, to recall that unexampled brilliancy of industrial production, which in the olden time satisfied the luxurious habits and tastes of the nobles. Under Francis the First, however, the grandeur and inimitable graces which characterised the labours of the *rénaissance*, showed manufactu ing skill in intimate union with art. Coming down gradually nearer our own times, we may mark every epoch in French history—deeply as her annals are stained with native blood and kingly debaucheries—is brightened with a national effort in favour of art-manufacture. The establishment of the silk manufactures of Lyons, in the year 1450; the excellences of the old looms of Paris, Beauvais, &c.; Colbert's Gobelin tapestry establishment; the carpet manufactories of Savonnerie; the Marquis de Fulvy's porcelain manufactory (the first established in France), reared at Vincennes in the year 1738, and which was afterwards sold to the *fermiers généraux*, who transplanted it to the village of Sèvres, and laid the foundation of those inimitable productions known as Sèvres ware—these are data which give indisputable proof that the French people have been, for ages past, a people with a strong natural love of art. Yet the national aptitude was not developed by liberal institutions.

Towards the middle of the seventeenth century, M. Chaptal, the historian of French industry, declares that France possessed looms only capable of producing the coarsest materials adapted to the wants of her population. Her fine cloths were imported from Spain and Holland; her best silks came from the Italian looms; other fabrics came from England, and Holland and Brabant supplied her with linens and lace. The advance of Colbert to power, however, changed the face of matters in this respect. The fetters were struck off from native manufacturers; skilful foreign workmen were called in; the two great Indian companies were formed; exportation and importation—an extended interchange—were encouraged by lessened duties; and a premium of five francs per ton was allowed on all new vessels. These enlightened regulations soon filled the ports of France with foreign merchantmen, and gave a most healthful impetus to the industry of the country. If commerce owes its revival in France to the minister Colbert, its principal branches owe him more, inasmuch as he was the first to establish them in his native country. He tempted the most distinguished foreign manufacturers to Paris, and by dint of liberal encouragement planted them in France, and set them to teach native artisans; and the result was, that within the short space of ten years 42,200 skilful clothworkers were settled in the provinces of the country.

It is impossible to over-estimate the debt of gratitude due to the memory of Colbert from his country. It was he who established the Gobelin manufactures, and placed the celebrated painter Lebrun to direct these unrivalled productions. It was he who obtained from Louis XIV. an edict, dated 1664, setting apart the sum of one million (worth two millions in the present time) to encourage manufactures and maritime commerce; and it should fairly be added, that Louis entered into the enlightened views of his minister with unusual alacrity. It was Colbert who reared the Invalides, the Observatoire, and the gates of St. Denis and St. Martin. It was Colbert who opened the Royal libraries to the public, and instituted searches in all parts of the world for valuable works to complete the Bibliotheque Royal de Paris. His history is written in the fine monuments which adorn the capital of his country, no less than in the present proud position which the manufacturers of France occupy. He struck the fetters from enslaved industry, and bade the workman aspire. At his command, merchantmen spread their canvas once more to the winds; Art leant over the weaver at his loom, to trace upon the growing fabric tints and lines of beauty; and Science rose to give a purpose to the mechanic's skill.

Suddenly the merchants' sails were furled, the loom stood still, and the mechanic left his bench to the beating of drums. A musket was in the hand of every Frenchman; commerce for a while stood still to watch the conflict; but even in these times of strife and bloodshed, some homage remained for her. Art was used to pamper the rich sensualist, but never passed the threshold of the poor. Before the French Revolution burst asunder the whole social fabric, and left a chaotic mass to reorganise its discordant atoms on a more liberal basis, the beauties of art were the enjoyment only of the wealthy. No schools existed for the tuition of humble aspirants; no open hand was proffered to the struggling artist. Yet the tide of public favour was not turned in favour of art by the promoters of the Revolution, not by an upstart from the ranks of the people; but, on the contrary, by a noble, who was proscribed before he could carry his plans into effect.

An appointment which immediately followed the installation of the Directory was that of the Marquis d'Avèze, in conjunction with MM. de Parny, de la Chablaussière, and Caillot, as manager of the Academy of Music, then called the Theatre of Arts.

"We received," the Marquis tells us in a pamphlet on the subject, "this fine establishment from the hands of the artists united for its support, in the most wretched state—in a position, indeed, menacing immediate downfall. Thanks to the efforts of our management, which lasted for three consecutive years, we bequeathed this splendid theatre to our successors in a most satisfactory condition, and in that high road to success which it has constantly followed until the present time (1844).

"In the year V. of the Republic (1797), I had not yet quitted the Opera, when the Minister of the Interior summoned me to undertake the office of Commissioner to the Manufactures of the Gobelins (tapestries), of Sèvres (china), and of the Savonnerie (carpets). I had no need to stay long in these establishments, to perceive the misery in which they were plunged. The workshops were deserted—for two years the artizans had remained in an almost starving condition; the warehouses were full of the results of their labours, and no commercial enterprise came to relieve the general embarrassment. Scarcely can I depict the effect produced upon me by such a scene; but at that moment a sudden and luminous thought presented itself to my imagination, and appeared to console me for the miseries of the present in the hopes it offered for the future. I pictured to myself in the most glowing colours, the idea of an exhibition of all the objects of industry of the national manufactures. I committed my project to paper, I detailed the mode of its execution, and prepared a report, addressed to the Minister of the Interior, which was written throughout by my own hand, and delivered by me to M. Laucel, then at the head of the section of Arts and Manufactures, in whose office the document in question should still exist. My report soon received the approbation of the Minister of the Interior, M. François de Neufchateau, who commanded me to carry it into effect by every means useful and suitable to the Government.

"The *château* of St. Cloud was then uninhabited and completely unfurnished; and this appeared to me the most appropriate and eligible spot for the exposition which I had projected, and likely to invest the exhibition with all the magnificence and *eclat* so necessary to attract strangers, and to further the sale of the objects exhibited, the produce of which might mitigate the sufferings of our unhappy workmen. The *château* of St. Cloud was obtained without difficulty. I established myself there, and requested the attendance of MM. Guillamont, Duvivier, and Salmon, directors of manufactures. I explained to them the intention of the Government, and found all these gentlemen ready to further this object with zeal and activity. In a few days, by their obliging exertions, the walls of every apartment in the *château* were hung with the finest Gobelin tapestry; the floors covered with the superb carpets of the Savonnerie, which long rivalled the carpets of Turkey, and latterly have far surpassed them; the large and beautiful vases, the magnificent groups, and the exquisite pictures of Sèvres china enriched these saloons, already glowing with the *chefs d'œuvre* of Gobelins and the Savonnerie. The Chamber of Mars was converted into a receptacle for porcelain, where might be seen the most beautiful services of every kind, vases for flowers, in short, all the tasteful varieties which are originated by this incomparable manufacture. In the centre of the saloon, surrounded by all these beauties, was a wheel of fortune, containing lottery tickets eventually to be drawn: every ticket was to obtain a prize of greater or less value; the price of each ticket was twelve francs. I had attained to this point when the Minister gave me an assistant in the person of M. Lessure, a young man of great merit, with uncommon zeal and intelligence. I had already, for some time, enjoyed the advantage of the services of M. Peyre, a young architect of exquisite taste and distinguished talent. He it was who superintended the arrangement of the exposition; and when this was completed, I referred to the Minister to fix the day for its being opened. It was decided that this should take place in the month of Fructidor; but previous to that time a number of distinguished persons in Paris, and many foreigners, visited the exposition, and made purchases sufficient to afford a distribution to the workmen of the different manufactures, thus yielding a little temporary relief to their necessities. The fame of this forthcoming exposition inspired the citizens of Paris with an eager desire to enjoy it as soon as possible; they anticipated with impatience the 18th Fructidor, the day fixed for public admission to St. Cloud. The courtyard was filled with elegant equipages, whose owners graced the saloons of the exposition, when, in the midst of this good company, I received an official notice from the Minister to attend him immediately, and to defer the opening of the exposition. I obeyed the mandate on the morning of the 18th. I waited on the Minister, from whom I received an order to close the *château*. Already on the walls of our city was placarded the decree of the Directory for the expulsion of the nobility, with an order for their retirement within four-and-twenty hours to a distance of at least thirty leagues from Paris, and this under pain of death. My name was in the list; and, consequently, my immediate withdrawal was imperative. The barriers were strictly guarded, and it was impossible to pass them without the order of the commandant. My position was doubly painful: on the one hand, it was essential to obey the decree of the Government; on the other, I had an account to render of all the treasures in the *château* of St. Cloud. I found no difficulty in explaining my situation to the Minister and the commandant of the place, the Marshal Angereau. I requested him to furnish me with a sufficient force for the protection of the *château*, in which so many precious objects were deposited. He gave me a company of dragoons, under command of Captain Vatier, and ordered a passport for me, by means of which I could leave Paris and return to St. Cloud. I caused an inventory to be made in my presence of all I left in the *château*. I closed the gates and delivered the keys to M. Maréchau, the keeper, in compliance with the order of the Minister. I posted the military which had been granted to me around the *château*, and, my duties fulfilled, hastened to obey the decree of the proscription.

"Such is the true and exact history of the first idea of a National Exposition, and of the first attempt to realise that idea."

This modest narrative of the originator of these exhibitions was written by the Marquis so late as the year 1844, in reply to the reports of MM. Challamel and Burat, in which the honour of their origin was accorded to François de Neufchateau.

The labours of the Marquis, however, in the cause of the industrial arts did not terminate with his compulsory retirement; for, on his return to Paris, at the beginning of the year 1798, he forthwith collected an exhibition of native art-manufactures within the spacious house and grounds of the Maison d'Orsay, Rue de Varennes. It was to be expected that the specimens of manufacture he assembled would consist entirely of costly goods, inasmuch as manufactures of any excellence were not within the reach of the great body of the people. The masterpieces of manufacturing skill were, therefore, to be found exclusively in the palaces of the rich; and from these abodes of luxury he withdrew the gorgeous cabinet-work and marqueterie of Riesoner and Boule; the clocks of Leroy; the gorgeous typographical productions of De Thou and Grolier; Sèvres and Angoulême porcelain; the masterpieces of Vincent and David; the choicest fabrics of Lyons; and other costly products of the artist and the artisan. The exclusive character of the exhibition was the result, not of D'Avèze's wish, but of the condition of French society. He led the way which has been so faithfully and happily followed; he created in the hearts of the manufacturing population of France that enthusiasm for their calling—that anxiety for the excellence of their national manufactures, which has since distinguished them.

MM. Challamel and Burat have been guilty of a palpable injustice towards the Marquis d'Avèze, by remaining wholly silent upon the subject of his enlightened labours in the cause of art-manufacture, in their zeal on behalf of the accomplished De Neufchateau. The year 1798 was a most favourable one for an exhibition of native industry. Napoleon had achieved his most brilliant actions in Italy, and brought the war to a successful termination; the spoils of war had been inaugurated with prodigal pomp, and it was happily suggested that the little collection in the Rue de Varennes should be copied on a grander scale. The Government, bearing in mind the efforts of the Marquis d'Avèze at St. Cloud, and more lately in Paris, determined to erect a "Temple of Industry" on the Champ de Mars. Here the triumphs of war had been celebrated, and here it was resolved that the nursling of peace should receive a national ovation: the olive should be intertwined with the blood-bespattered laurel; Lenoir should not be forgotten in the glory of the defenders of the *batterie des hommes sans peur!*

Augustin Challamel, in his "Histoire-Musée de la République Française," vouchsafes not a word to the Marquis d'Avèze; but declares at once, and without preface, that only two of the *fêtes* of 1798 are worth notice, from the impulse which they gave to the industry and art of the country, viz. that of the foundation of the Republic, and that of Liberty held on the 10th of August. At the first, M. Challamel tells us, François de Neufchateau put a very happy and useful idea into execution; but the writer dexterously refrains from naming the progenitor of the idea upon which the accomplished minister acted. Under the superintendence of De Neufchateau, M. Challamel continues, a fairy building was erected to the west of the national altar, containing long streets of stores and shops. This was the first national exhibition of French industry. By exciting emulation amongst native manufacturers, and appealing to their pride, they had been prevailed upon to send specimens of their workmanship from far and near. In the outset this exhibition was called "a fair;" but the importance given to it by the universal encouragement with which its establishment was met, soon gave it the complexion of a thoroughly national undertaking. On the eve of the opening of the exhibition, François de Neufchateau, attended by a jury, the civil dignitaries, and the learned of all denominations, held a meeting within the building, and delivered a speech beginning in these terms:—"We are no longer in those unhappy times when enslaved industry trembled to bring forth the fruits of her skill and meditation; when galling enactments, monopelising corporations, and fiscal burdens bowed down the inventive spirit; when art, become at once the instrument and the slave of despotism, helped to rivet the chains about the citizen, and owed success to flattery, corruption, and the humiliation of a shameful servitude."

This picture of commercial bondage is more forcibly touched upon in Jules Burat's Historical Essay. He tells us, for instance, that a special Royal enactment was necessary to secure to Lenoir, the celebrated mathematical instrument maker, the benefits of his skill. Monopolising corporations stood in the way of all inventors who did not belong to them. Thus, printed cottons and silks were so long kept out of France by the efforts of the corporations of silk and cotton manufacturers. Arin Argant's lamps are well known now throughout the world; but it may be interesting to note the fact, that his invention was well nigh destroyed, at first, by the corporations of ironfounders and locksmiths, because he was not a member of either of these societies.

Reveillon, who first introduced the art of painting paper into France, had to contend with the most vexatious impediments thrown in his way by the corporations of printers, engravers, and manufacturers of tapestry, and only escaped these persecutions by obtaining for his establishment the title of "Royal manufactory," a privilege which eventually led to its destruction, after the breaking out of the Revolution. When the privileges of corporations could not be brought to bear upon inventors, Royal interests stood in the way. The most absurd and obnoxious monopolies were conceded to favourite subjects, regardless of the misery that might accrue to a class of the people from their enforcement; and these, coupled with the jealousies of corporations and the tyranny of the Throne, made France, throughout the seventeenth and the greater part the eighteenth century, an unfruitful, if not a dangerous abode for a man with inventive faculties. The instance of Fosse Van Rabais' privilege is notorious. It appears that this individual obtained, in 1665, an enactment from the King, which secured to him and his posterity the exclusive right of manufacturing cloth within an area of thirty leagues from Abbeville. M. Burat declares, that the effect of this monopoly was to retard the improvement of native clothworkers for a considerable period. Another instance of the disastrous effects of such a system of monopoly may be instanced in the law which shielded the porcelain of Sèvres, to the detriment of other manufacturers, as well as to the disadvantage of the general public, who could not afford to pay the prices demanded for the protected manufacture. The monopoly gave a worth to Sèvres china, and kept it within the reach of the wealthy only; but we have not learned that the potteries of Sèvres have deteriorated from having to compete with those of other places. That which was formerly the exclusive enjoyment of the rich, has become the luxury of the many. This cannot be doubted; and there are few even in the present time who will be sorry to behold such a result of free competition.

The "Temple of Industry," under the control of De Neufchateau, remained open only during the three last complementary days of the year VI. of the Republic (1798); but it sufficed to excite the greatest enthusiasm throughout the country. Those who managed this exhibition, in concert with M. de Neufchateau, unanimously agreed that the safest principle to adopt for the award of prizes was to entrust the decisions on the merits of the competitors to a jury composed of a selection of the most distinguished available men in science and art. This system was adopted, and was found to work so well that it has been adhered to ever since. This first jury consisted of nine men only; namely, Chaptal, member of the Institute; Vien, painter; Motte, sculptor; Molard, member of the Society of Arts and Manufactures; Gillet Laumond, Commissioner of Mines; Duquesnoy, of the Agricultural Society; Ferdinand Berthoud, chronometer-maker; Gallois, a literary man; and Darcet, member of the Institute. There is no printed copy of the report which they made; but M. Julien Lemer, in his "Manuel de l'Exposant," gives a list of the principal manufacturers to whom prizes were awarded. They are as follows:—"M. Breguet, whose name is European, in connexion with the improvement of watch and clock-making; Lenoir, to whose skill as a mathematical instrument-maker we have already alluded more particularly; Didot and Herhan, who exercised so direct an influence upon the improvement of printing; Dilk and Guerhard, whose painted china rivalled the beauty of that of Desarnod, described as the French Rumford; Conté, whose name is familiar to every artist, and to whom we are indebted for the application of machine-ruling to engraving; Clouet and Payen, who directed a vast chemical manufactory; and Denys de Lust (Seine-et-Oise), who exhibited cottons spun to all degrees of fineness, from the most common to No. 110.

The second *fête* noticed by Augustin Challamel is that of Liberty. This festival appears to have been almost exclusively devoted to a national and sumptuous acknowledgment of the grand results of science and art; and the trophies, which were at once its chief ornament and the conspicuous disgrace of the country (the masterpieces filched from Italy), were raised aloft in the streets to the wondering gaze of thousands. The *cortège* was one of the most magnificent spectacles on record. As early as nine o'clock in the morning, the citizens who were to take part in the procession assembled along the left bank of the Seine, where the triumphal cars, loaded with trophies, were ranged. The procession was divided into three distinct divisions. At the head of the first a banner was borne, on which was inscribed, "Natural History." Foremost in this division the professors and administrators of the Museum walked, followed by the choice scholars, who marched by the side of the cars. The first car was loaded with various minerals, surmounted with this inscription:—"Every day art discovers herein new properties." The second car was full of petrifactions from Verona; and above these was written, "Monuments of the antiquity of the world." The third car contained the seeds of foreign vegetation, with the inscription—"The palm, the banana," &c. The fourth car was crowned with living foreign plants, surmounted with these words: "They will increase our wealth and our pleasure." The fifth car was devoted to an African lion. The sixth, to a lioness. The seventh, to a lion from Sahara. The eighth, to a Swiss bear; and after these followed two dromedaries and two chamois. The ninth car was ornamented with agricultural implements from Italy, surmounted with this sentiment: "Ceres smiles at our trophies." The tenth car, which closed the first division, was loaded with two blocks of crystal, on which was inscribed, "The gift of the people of Valois to the French Republic."

The banner which was borne at the head of the second division was thus inscribed:—"Books, Manuscripts, Medals, Music, and Oriental Type." "Science and Art are the support and ornament of Liberty." This banner was immediately followed by a chorus, singing patriotic melodies. Next came deputations from the scientific and literary societies; the principal actors from the theatres; the public librarians; the professors of the Polytechnic School; and, finally, the professors of the College of France, carrying a bust of Homer on an antique tripod, before which floated a banner thus inscribed:—"Seven cities disputed the honour of having given birth to him." Behind this bust followed professors of other learned societies, together with their most distinguished pupils. Then came six cars, covered with devices from Fontaine, Seneca, Delille, &c., which closed the second division.

Upon the banner of the third and closing division, a sentiment from Lavallée was written, "The arts seek those lands where the laurel flourishes." A choir of boys walked behind this banner, singing appropriate snatches. Next came those pupils who had carried the last fine art prizes; and, after them, the custodiens of the National Galleries, the professors of painting, sculpture, and architecture, followed by their several classes; among whom a banner was carried, announcing "Specimens of the Sculpture of the Ancients."

No less than twenty-nine chariots laden with Italian spoils followed this banner. These desecrated trophies included the bronze gilt horses from the Place of St. Marc, at Venice; the Nine Muses, Cupid and Psyche, the Venus (from the Capitol), the Mercury de Belvidere, Venus and Adonis, the Egyptian Antinoüs and the Antinoüs de Belvidere, the Dying Gladiator, Trajan, Marcus Brutus, Ceres, the Apollo de Belvidere, and the Laocoön.

Then followed a banner heralding the pictures, and thus inscribed:—"Flock hither, Artists; your Masters are here!" And what followed justified the gilded letters on the banner. Among other precious relics dragged through the streets on this occasion were Raphael's "Transfiguration," and the masterpieces of Domenichino, Romain, Titian, Paul Veronese, &c.; and these treasures were followed by the Government authorities of Italy, decked with the tri-colour, and holding in their hand a crown of laurels.

These closed this brilliant procession, which threaded the principal thoroughfares of Paris, and was at once a suggestive picture of the sagacity and insatiable greed of the conqueror. The method of its formation betrays what was passing in the mind of Napoleon at the time; and it is not unreasonable to trace the pacific and scientific character of this splendid day to the enlightened original idea of the Marquis D'Avèze, whose zealous efforts on behalf of the Gobelin and Sèvres workmen had attracted an unusual degree of attention, and could not have escaped the acute observation of Napoleon. It is right that the claims of the Marquis should be fairly set beside those of his more pretentious rivals.

This first experiment was found to create such enthusiasm throughout the country, and to give such a healthy stimulus to native industry, by exciting an emulation of excellence among the manufacturers, that the Government at once determined to repeat it annually. The nature of the prizes offered, or rather the regulations under which they were distributed, showed at once the undoubted superiority of English manufactures at the time to those of France, and the Gallic animosity existing towards this country. Government orders were addressed to the prefects of all the departments, directing them to form local committees empowered to decide upon the local products to be forwarded to the next exhibition. The prizes were to consist of twenty silver medals and one gold one, to be awarded to that competitor who should have opposed the most formidable rivalry to the looms of England. These directions were sent out by M. de Neufchateau; but, although in this minister's circular annual exhibitions were promised, the rapid current of public events, the wars, the fall of the Directory, and the establishment of the Consulate, retarded the opening of the second till 1801.

The time for this second exhibition was auspicious. The first Consul, loaded with laurels from his wars, was wisely employed in cultivating and stimulating the arts of peace. He felt that his prosperity rested more in his sagacity and prudence in times of peace, than in his renown as a warrior. His splendid victories dazzled his adopted countrymen, and flattered their pride; but he understood the French character too well, to trust to that gratitude which was the mere echo of their flattered vanity. He therefore employed the leisure of temporary cessation of hostilities in paying visits to the workshops and great factories of Paris, Lyons, Rouen, Brussels, Liege, Aix-la-Chapelle, and Milan, in company with his illustrious and sagacious friends, Bertholiet, Monge, and Chaptal (the framer of the report on the first exhibition). Everywhere he stimulated the manufactures by promises of the future, and by an anxious solicitude for their prosperity. Whether from selfish or purely patriotic motives, is a question of debate; but that Napoleon always acted sympathetically with the people at large, cannot be doubted. He attended to their requests, and respected their wants, and called the public market the "Louvre of the common people," therefore he re-built and enlarged it. He declared "the rabble" to be the only aristocracy on which he could depend in critical times; and his internal administration of affairs demonstrates the sincerity of this conviction in his mind. He paid his acknowledgments to talent in a prompt and most complimentary manner. When he suddenly came across a man of rare abilities—as Ternaux, the founder of many fine factories—he would pluck the cross from his own breast, and decorate him in the presence of whoever might be in the way at the time. Instantaneous action was the secret of his power. He was as quick to execute as to resolve; he could not understand the word "hesitation." He had the faculty of seeing an entire question at a glance; and thus his rapidity of action seldom led him to commit errors of judgment. Instances of his judicial errors are rare; and, moreover, are so well repaired on the instant, that their evil effect is seldom palpable. During the commercial crisis under the Imperial sway, while irritated by the news of maritime reverses, he ordered all English goods found in the country to be burnt. This command raised a loud deprecatory clamour, and he at once saw the impolicy of which he had been guilty. The reparation he made was imperial—about twenty-one millions were advanced to the industrial community.

(To be Continued.)

THE ILLUSTRATIONS.

Several of the Illustrations which appear in this week's Supplement of the ILLUSTRATED LONDON NEWS, are duly noticed and described in the opening article. Subjoined is a list and description of the subjects which

we have engraved for this Number, of which no account appears in the more regular narrative.

SHIELD.—ARMS OF ALL NATIONS.

The Shield engraved upon this page—copied from an enamel which forms one of the ornaments of the Fine Art Section—gives the arms of all those nations which indulge in the luxury of heraldry. This beautiful work was designed and executed by Mr. Buss, of Great Newport-street.

JEWELLED BOXES BELONGING TO THE EAST INDIA COMPANY.

The jewelled boxes, portion of the treasures shown by the East India Company, are of jasper. One is of exquisitely pierced work; the other is sculptured, enamelled, and set with rubies, not only in the flowers, but also in the border and sides.

CLOCK BY MESSRS. MOORE.

The clock by Messrs. Moore, of Clerkenwell, possesses novel features in design; its chief novelty, however, consists in the rich enamelled ornaments which decorate the front, the pendulum, and the circles within which the figures numbering the hours are placed. The whole is very beautifully finished.

BROOCH FROM THE IONIAN ISLANDS.

The Ionian Islands, it appears, have had a narrow escape of being totally unnoticed at the Great Exhibition, though standing in the remarkable position of being the only people under British protection, and somewhat specially noticeable as her Majesty's Greek subjects. It came to the knowledge of an Ionian (a distinguished advocate of his country's cause through the press) that the Lord High Commissioner of the Ionian Islands, Sir Henry Ward, had written to the Commissioners, declining any space in the building for the Ionians. Well knowing the skill and industry of his countrymen, as well as the richness of the produce of the islands, he lost no time in making a representation to the Royal Commissioners on the subject, who lent a ready ear, and immediately set aside a space for the Ionians. What was now to be done? There was no time to send to the islands, so he wrote off to several English noblemen and gentlemen who had served there; and the result was, that Lord Seaton and several members of his family, Lord Charles Fitzroy, and one or two others, manifested much solicitude on this point, and readily forwarded such articles of Ionian workmanshp as were in their possession. These, though few in number, will, nevertheless, as specimens of embroidery and jewellery, as well as of silk in the raw and manufactured state, form a very interesting and not unworthy sample of what the Ionians might have sent to the World's Fair had they been made to understand what was expected from them.

The very elegant Brooch of Silver, of fine workmanship and of exquisite fancy, as might be expected from Greek taste, which we give of the full size, has been kindly contributed through Lord Seaton, by Miss Yonge, of Otterbourne, near Winchester. It is described as "Large Brooch of Silver," of fine workmanship, combining in the centre the Lion and Crown of England, the Protecting Nation, on a large medallion, with the seven medallions of the Seven Islands depending upon it.

The centre medallion represents the arms and emblem of the island of Corfu, "the Flower of the Sea"—a female figure supposed to be Corcyra, the daughter of Asopas, who was carried off by Neptune to the islands: she is seated upon a rock, holding in the hand of her extended right arm an olive-branch. On one side of her is a cornucopia, denoting the fertility of the island, and on the other an ancient galley, emblematic of the commercial spirit and wealth of its inhabitants. This ship, which is rudderless, sometimes stands alone as the arms of the island, and has been also supposed to take its origin in the ship of Ulysses, which was fabled to have been transformed into a rock, which, somewhat of the figure of an ancient vessel, stands at the entrance of the harbour. The letters κερ are the abbreviation of the ancient Κερκορα (Corcyra).

The medallion on the right is marked by a tripod for Zante, and the letters ζαθ the abbreviation of Ζακονθος (Zacynthus).

The next to this on the right is the medallion of Santa Maura. The harp upon it symbolises its fame as the death-place of Sappho, the letters λευ being the abbreviation of its ancient name Λευκαδια (Leucadia). Another emblem of this island is Bellerophon on a winged horse attacking the Chimæra, which it derives from its Corinthian colonization. The last on this side is Ithaca, marked with the head of its King, Ulysses, the letters ιθα, being the abbreviation of Ιθακα (Ithaca).

On the right of the Corfu medallion is that of Cephalonia, the next island in magnitude, represented by Cephalus, the son of Mercury and Creusa, who, when condemned by the court of Areopagus to perpetual exile for having unwittingly killed his wife, Procris, came to this island. He is represented as reposing after the chase—a dart in his hand and his dog at his feet. The letters Κεφ are the abbreviation of Κεφαλληνια (Cephalonia), the ancient designation of the island.

Cerigo comes next. The letters κυθ denote Κυθαρα, the ancient Cythera, represented in the medallion by Venus, to whom the island was sacred, and who was fabled here to have had her birthplace and her domicile. The goddess is standing on her shell, drying her hair with the one hand, and holding in the other the famous apple.

Paxo, the smallest of the islands, comes last. Its sacredness to Neptune is denoted by his trident; the letters Πα are the abbreviation of Παξο (Paxo). This island is also represented by the helm or rudder of a ship within an olive garland.

FOUNTAIN BY THOMAS.—(SEE PAGE 364.)

ASPREY'S DRESSING-CASES, INK-STANDS, ETC.

The first is an elegant stand, of original design, in richly chased or molu, surmounted by an ink-glass in the form of an elaborately-executed vase, in or molu, with two figures blowing horns forming a pen-rest. The next article is an ebony casket, of superior workmanship and unique design, artistically arranged, with serpents upholding antique corals. The feet, handles, key, &c., are all elegantly and artistically wrought. The last is a jewel-casket or cabinet, also of original design, richly furnished, in or molu, set with malachite, arranged with drawers and folding doors, pierced and chased in relief, of superior workmanship.

STAND AND CASKET BY WERTHEIMER.

This exquisitely wrought work of art is of the most *recherché* character, being inlaid with malachite, which harmonises perfectly with the rich or molu of which the casket is composed. The outline is very beautiful. The enrichments extremely varied, and fine in workmanship. The stand is quaint in style, and has also chains and festoons of metal work, inlaid with malachite, to correspond with the casket.

WIDDOWSON AND VEALE'S TEA AND COFFEE SERVICE.

The tea service is of true Etruscan shape (the coffee-pot the celebrated Hamilton vase), and the ornaments are from Flaxman's designs to illustrate the "Iliad;" namely, "The Council of the Gods," "Diomed casting his spear against Mars," "Neptune rising from the Ocean," "The Descent of Discord," "Venus, wounded, conducted by Iris to Juno," and "Minerva repressing the fury of Achilles."

MESSRS. COTTAM AND HALLEN'S IRON GATES.

The iron gates exhibited by Messrs. Cottam and Hallen, of Oxford-street, are fine specimens of ornamental gates for a park, in the style of those of elegantly wrought iron work made about a hundred and a hundred and fifty years since, and which adorn the entrances to many of the old mansions of England. One great merit of these gates is, that they can be made at a reasonable rate as compared with the wrought iron-work.

PERFORATED STONE PANELS.

The perforated stone panels we engrave are good examples of the patient labour of the natives of the East, and are exhibited by the East India Company.

MR. WEBB'S CANDELABRA.

The candelabra displayed by Mr. Webb, of Bond-street, are very fine in design and execution, in the Venetian style of the sixteenth century. The carving is bold and effective, and the or molu branches are well arranged and beautifully chiselled.

SIDE OF A LIBRARY.

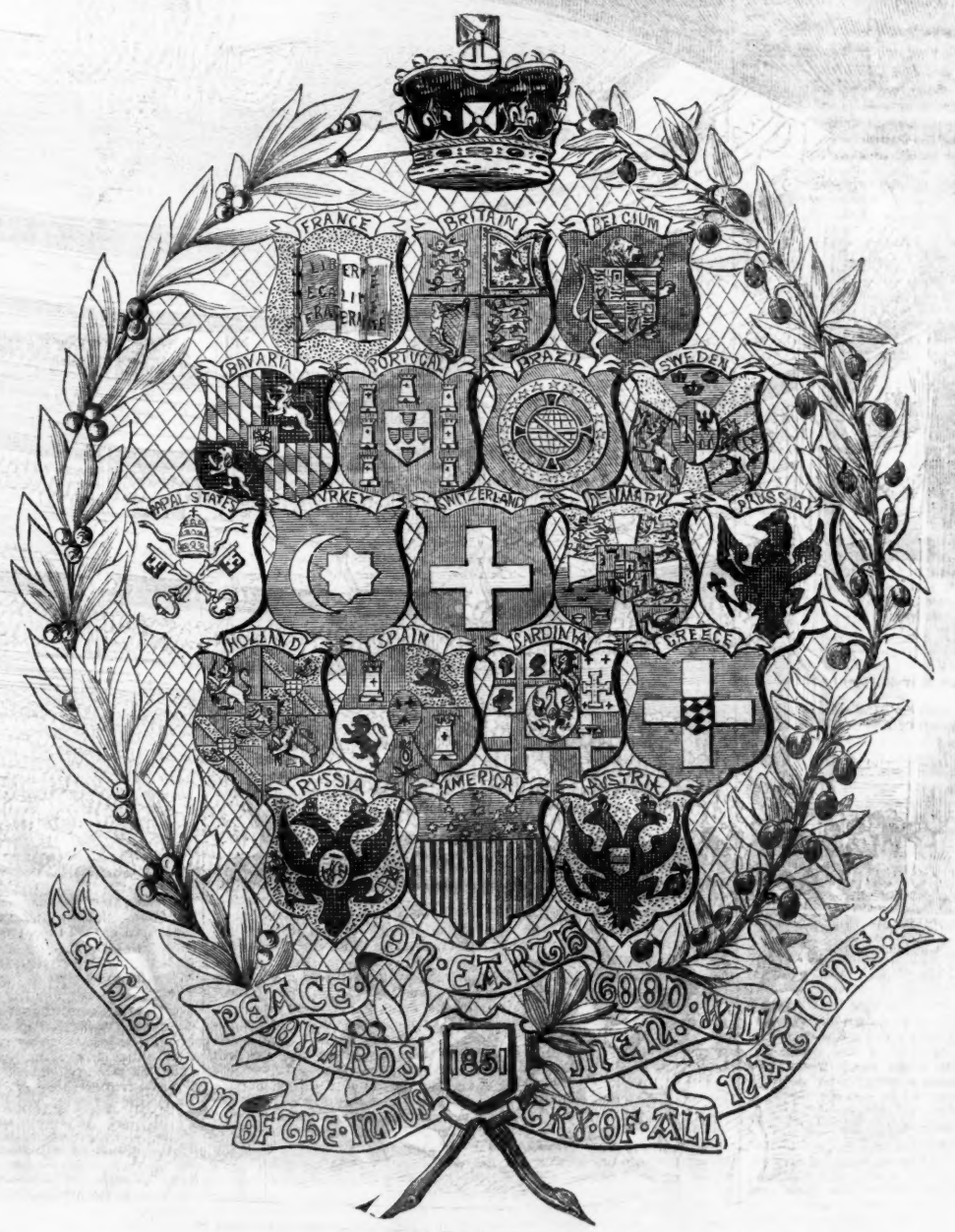
The Chimney-piece and Bookcases intended for the side of a library, of which we have engraved an Illustration, are contributed by Messrs. Holland and Sons, of London. They were executed from the designs, and under the superintendence of Mr. T. R. Macquoid, and form a very first-rate example of carving; and, allowing for some degree of ponderosity, owing to the nature of the material, an excellent specimen of design in the Italian or *cinque cento* style. The whole is composed of walnut wood, and the details are admirably wrought out. The introduction of green marble panels and gilded perforations gives richness and colour to the general effect. The size is about twenty feet long, by thirteen feet high. Let the visitor contrast this with the Kenilworth buffet, exhibited by Messrs. Cookes and Sons, of Warwick, and placed in the Fine Art Court, and to which we purpose paying special attention in due course, and he will find excellence of the highest character in each, whilst in every other respect there is scarcely a point of similarity. Going from these to the Austrian apartments, as already recommended, a very distinct idea of three kinds of carving will be obtained, and the lesson learned will not be without its uses.

THE COLEBROKE DALE COMPANY'S RAILING FOR A TOMB.

The original of this was designed and erected for that of the celebrated Beckford, author of "Vathek," at Bath. It is of a simple and elegant character, standing about two feet and a half high. This casting affords one of many gratifying examples of the progress made by this country within the last few years in this important and elegant branch of decorative art.

MESSRS. JACKSON'S CARTON PIERRE CORNICE.

This cornice gives a good idea of the elaborate character of the examples of *carton pierre* ornaments exhibited by Messrs. Jackson. As a specimen of modelling, it is perfect, the inflections being well marked, and the forms at once graceful and appropriate.



ENAMEL.—ARMS OF ALL NATIONS.

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